

Combined Author Index

Aaronson, H.I.	427-435A	Chang, Y.A.	43-54A	Fang, Q.T.	2117-2124A	Haunschmid, P.A.	213-219B
	1287-1288A		1921-1930A	Fearing, V.L.	245-246A	Hayes, P.C.	701-708B
	1623-1626A		329-335B	Feng, C.R.	1571-1577A		709-717B
Abel, O.	729-732B	Charette, A.	487-492B	Feng, W.X.	1209-1220A		591-594B
Acholou, C.C.	33-37B	Charpentier, P.L.	1699-1710A	Finnimore, D.K.	283-286A	Heiser, E.L.	149-153B
	345-349B	Charreyron, P.O.	173-181B	Fitzsimons, G.	241-243A	Heitl, L.A.	1281-1286A
Adasczik, C.	117-125B	Chen, C.H.	719-728A	Fix, R.	1837-1847A	Hellawell, A.	595-597A
Ahman, L.	1829-1835A	Chen, M.M.	2175-2184A	Flemings, M.C.	241-243A		2163-2173A
Alam, M.	400-403B	Cheong, D.S.	147-153A	Fong, H.S.	1303-1310A		459-469A
Allstetter, C.J.	719-728A	Cheruvu, N.S.	693-699A	Ford, J.D.	2095-2097A		1003-1012A
Anello, J.	693-699A	Chewey, P.M.	1741-1752A	Fraser, H.L.	173-181B		1626-1631A
Ardelli, A.J.	1631-1643A	Chilton, J.M.	1137-1145A	Fletcher, M.A.	1963-1967A	Henein, H.	5-12B
Argyropoulos, S.A.	47-58B	Cho, S.-J.	1075-1080A	Flewitt, P.E.J.	707-718A	Henry, M.F.	1339-1351A
Arsenault, R.J.	1571-1577A	Chochol, M.	663-676B	Florence, S.	783-792A	Heusler, K.	281-288B
Asaki, Z.	127-133B	Choo, W.Y.	1953-1955A	Fong, H.S.	5-10A	Hicki, A.J.	1099-1102A
Atkinson, M.	1185-1192A	Chu, M.G.	1303-1310A	Ford, J.D.	719-723B	Hillert, M.	411-419A
Ayers, J.D.	1117-1127A	Chu, W.Y.	729-733A	Fraser, H.L.	149-153B		245-246A
			2087-2092A	Fray, D.J.	135-139B	Hirth, J.P.	1485-1490A
				Friesel, M.	1849-1853A	Hong, C.P.	91-99B
Baer, D.R.	853-860A	Chung, Y.-Y.	1921-1930A	Froes, F.H.	1493-1496A	Hsiao, C.-M.	729-733A
Baerlaek, W.A., III	1948-1952A	Chuck, W.	2125-2137A		183-197A		2087-2092A
Bain, K.R.	381-388A	Churn, K.S.	331-338A		248-249A	Huang, S.C.	399-402A
Baker, I.	1129-1136A	Clark, W.A.T.	427-435A	Fujimura, Y.	679-691A	Hunt, J.D.	983-994A
Ballal, N.B.	71-75B		1623-1626A			Hutchings, R.	2221-2229A
Barcik, J.	406A		573-586A			Hwang, C.M.	1155-1163A
Barria, E.V.	1415-1430A	Cline, H.E.	1013-1017A			Hysecka, L.	2193-2203A
Bay, B.	287-297A	Clyne, T.W.	369-381B	Gao, M.	735-746A		
Beck, C.G.	23-28A	Cohen, J.B.	1519-1529A	Garcia-Cordovilla, C.	389-391A		
Beckerman, L.P.	661-670A	Cohen, M.	819-833A	Garcia-Rocha, J.	939-941A		
Beevers, C.J.	1465-1474A	Colters, R.G.	517-521B	Gasior, W.	543-546B	Imbert, C.	1855-1864A
Belton, G.R.	555-563A	Cook, J.M.	1977-1986A	Gaskell, D.R.	563-571B	Immagineon, J.-P.	339-345A
	517-521B	Coons, W.C.	1741-1752A	Geiger, G.H.	617-622B	Immagineon, J.-P.A.	501-510A
	655-661B	Cooperdrider, M.W.	433-440B	Gerberich, W.W.	875-888A	Inouye, H.	1505-1507A
	563-571B	Coriell, S.R.	2109-2115A	Gibson, E.D.	889-900A	Ishida, K.	1819-1828A
Bensussan, P.L.	107-120A		2117-2124A	Gibson, J.	121-128A	Ishii, H.	679-691A
Berggren, M.H.	433-440B		2125-2137A	Gillies, P.P.	331-338A		250-251A
Berke, N.S.	393-395B	Courtney, T.H.	1065-1074A		747-754A		
Berstein, I.M.	1953-1955A	Craig, B.D.	565-572A		1103-1110A		
Bertram, L.A.	117-125B	Cramb, A.W.	655-661B	Geyling, F.T.	1963-1967A		
Beswick, J.	299-306A	Crombie, E.A.	23-28A	Ghali, E.	605-608B	Jablonski, D.A.	107-120A
Bhambr, S.K.	250-251A	Crompton, J.S.	1711-1719A	Gherardi, F.	1331-1334A	Jackson, A.G.	248-249A
Bhattacharya, D.	547-562B	Crooks, J.	1137-1145A	Ghosh, A.	71-75B	Jimbo, I.	535-541B
	547-562B	Crooks, R.E.	1367-1377A	Ghosh, A.K.	323-329A	Jin, Z.-M.	5-12B
Biancaniello, F.S.	1987-1997A	Cuddy, L.J.	87-98A	Gibson, E.D.	283-286A	Jiricny, V.	623-631B
	55-66A	Cummings, D.L.	639-648A	Gibson, J.	2075-2085A	Jones, R.H.	853-860A
Bibby, M.	299-305B			Gillies, P.P.	129-132A	Jones, S.E.	129-132A
Bišs, V.	1379-1387A				133-138A		133-138A
Björkman, B.	511-516B	Dai, W.	319-327B	Gingerich, K.A.	2075-2085A	Jungling, T.L.	2231-2240A
Blackburn, D.A.	639-648A	Dandapani, B.	605-608B	Gleiter, C.	383-391B	Junze, J.	307-312A
Blanchard, W.K., Jr.	1281-1286A	David, S.A.	1505-1507A	Glickman, M.E.	2117-2124A		
Block-Bolten, A.	461-469B	Davidson, D.L.	1579-1588A	Glover, S.G.	1095-1101A		
Bockris, J.O'M.	39-46B		1931-1940A	Gokhale, A.M.	1081-1088A	Kabassis, H.	1515-1517A
Boettlinger, W.J.	55-66A	Davis, D.G.	67-72A	Gokhale, A.M.	1643-1651A	Kandeil, A.Y.	501-510A
Boisvert, R.F.	2117-2124A	Dayananda, M.A.	649-659A	Glover, S.G.	243-245A	Kane, R.H.	5-10A
Bourgeois, T.	487-492B	De Jonghe, L.C.	685-694B	Goldak, J.	391-393A	Kang, C.T.	403-405A
Bowden, D.M.	1697-1698A	de Malherbe, M.C.	501-510A	Goldstein, J.I.	299-305B	Kanome, O.	609-615B
Bowker, J.	2093-2095A	DeArdo, A.J.	241-243A	Goto, S.	861-865A	Kato, M.	755-756A
Bradley, J.R.	1287-1288A	DeBroy, T.	400-403B	Gougeon, M.	1643-1651A	Kaufmann, E.N.	1787-1805A
Bretz, P.E.	369-379A	DeCarlo, J.L.	641-644B	Gougeon, M.	383-391B	Kawabae, H.	1273-1280A
Brewer, L.	67-72A	Dell, M.B.	2155-2161A	Gokhale, A.M.	393-395B	Kawarasaki, T.	679-691A
Briant, C.L.	2075-2085A	Deyo, R.	277-280B	Gordin, M.W.	1653-1664A	Kay, D.A.R.	523-528B
Bridge, M.R.	793-811A	Denholm, W.T.	1311-1317A	Grant, N.J.	1491-1493A	Keefe, P.W.	1865-1871A
Brimacombe, J.K.	581-589B	DiGiallardo, S.L.	121-128A	Gray, N.B.	77-89B	Kelly, T.F.	819-833A
	77-89B	Dilewins, J.	23-34B	Greulich, F.A.	1955-1958A	Kerans, R.J.	1721-1729A
Brown, R.D.	243-250B	Doane, R.E.	433-440B	Grob, B.	529-533B	Kestenbach, H.-J.	1496-1499A
	493-509B	Donald, J.K.	693-699A	Groben, P.J.	1379-1387A	Khan, P.A.A.	641-644B
Brisley, R.J.	307-318B	Donoso, E.	1999-2008A	Gruel, R.N.	1003-1012A	Kikuchi, M.	1431-1436A
Brown, J.M.	135-138B	Dressler, B.	2147-2154A	Gruendl, P.J.	1626-1631A	Kim, C.H.	393-395A
Brown, L.C.	29-31A	Drouven, B.	235-242B	Gruenwald, J.	1003-1012A	Kim, C.W.	649-659A
	449-458A	Dupre, B.	383-391B	Gruhko, B.	609-620A	Kim, D.	403-406B
	1969-1975A	Durand, F.	471-478B	Guhu, A.	1623-1626A	Kim, H.-M.	395-399A
	1613-1621A	Dutta, V.B.	1193-1207A	Guhu, A.	1331-1334A	Kim, H.J.	2213-2219A
	11-22A	Dwivedi, R.K.	523-528B	Guthrie, R.I.L.	47-58B	Kim, J.I.	2213-2219A
Buck, O.	147-153A			Grob, R.	1229-1245A	Kimura, R.T.	213-219B
Buene, L.	1787-1805A			Groben, P.J.	1597-1605A	Kimura, Y.	91-99B
Bui, R.T.	487-492B			Gruendl, P.J.	1873-1881A	Kirkaldy, J.S.	101-107B
Burke, M.A.	661-670A						541-544A
Bustos, A.A.	77-89B						545-553A
Carlsson, G.	633-640B	Eagar, T.W.	217-227A	Hack, J.E.	11-22A	Kishimoto, N.	396-400B
Carpenter, S.H.	1849-1853A		461-469B		756-760A	Kuchi, K.	199-202A
Carr, M.J.	347-368A	Easterling, K.E.	33-41A		1389-1396A	Klepaczko, J.R.	901-911A
Carter, R.D.	555-563A	Ebara, R.	250-251A		1397-1405A	Kleppa, O.J.	203-208A
Castillo, R.	229-236A	Eckelmeyer, K.H.	1319-1330A	Hahn, G.T.	947-959A	Kobayashi, K.F.	357-368B
Castleman, L.S.	1359-1366A	El-Kaddah, N.	633-640B	Hajika, K.	127-133B	Koizumi, T.	573-580B
Chakraborty, S.B.	511-517A		183-186B	Hall, E.L.	793-811A	Konitzer, D.G.	307-312A
	1229-1245A		59-70B	Hamm, R.	1787-1805A	Kondo, Y.	1731-1739A
Chakravarti, A.	299-305B	El-Naggar, M.M.A.A.	725-726B	Hammond, C.	813-817A	Korzekwa, D.A.	127-133B
Chan, C.	2175-2184A	El-Rahaiby, S.K.	19-22B	Hanafee, J.E.	121-128A	Kotz, D.A.	1221-1228A
Chan, K.S.	323-329A	Eldis, G.T.	1173-1183A	Hanna, M.D.	1147-1153A	Koria, S.C.	109-116B
	1579-1588A	Elliott, J.F.	663-676B	Hannula, S.-P.	595-597A	Krausz, G.	1281-1286A
	2097-2101A	Endo, T.	2029-2038A	Hannula, S.-P.	459-469A	Kramer, I.R.	1165-1171A
	756-760A	Ehrhart, H.	2241-2246A	Hansen, N.	2205-2211A	Krausz, G.	329-335B
	337-344B	Espiel, F.	229-233B	Hao, S.M.	287-297A	Kozuka, Z.	141-147B
	399-402A	Evans, J.W.	511-516B	Harris, R.	1819-1828A	Krausz, G.	1571-1577A
	685-694B		875-888A	Hart, R.G.	563-571B	Krausz, G.	1221-1228A
	671-678A	Eylon, D.	889-900A	Hart, R.G.	251-257B	Krausz, G.	347-368A
	73-86A		1311-1317A	Hauke, V.M.	1731-1739A	Krawitz, A.D.	1545-1554A
			13-18B		1407-1414A	Krehl, M.	1111-1116A

Krzewska, S.	451-459B	Mohamed, F.A.	1893-1904A	Plichta, M.R.	427-435A	Sherman, R.	1397-1405A
Kuhn, H.A.	1837-1847A	Moody, N.R.	1955-1958A	Podsiadly, H.	451-4593	Shewmon, P.	487-494A
Kumar, P.	1099-1102A	Moore, K.	1117-1127A	Podsiadly, J.	451-459B	Shewmon, P.G.	495-499A
Kundrat, D.M.	663-676B	Morris, D.R.	645-654B	Poirier, D.R.	163-172B	Shillet, G.J.	2021-2027A
Kurose, Y.	141-147B	Morris, J.W., Jr.	2213-2219A	Prange, R.	281-288B	Shingu, P.H.	1287-1288A
Kuwano, N.	621-626A	Morrish, K.A.	2125-2137A	Prasad, Y.V.R.K.	1883-1892A	Shiohara, Y.	471-480A
Kwon, H.	393-395A	Moser, Z.	543-546B	Pratt, W.	755-756A	Sick, G.	307-312A
Lakshmanan, V.K.	541-544A	Moukassi, M.	383-391B	Price, D.	913-922A	Shiohara, Y.	1303-1310A
	545-553A	Muddle, B.C.	1069-1098A	Purdy, G.R.	1055-1062A	Sieradzki, K.	729-732B
Landsberg, A.	695-700B	Mueller, R.R.	783-792A	Proulx, C.	1499-1502A	Sigworth, G.K.	1941-1946A
	732-734B	Mukherjee, A.K.	1437-1441A	Pussegoda, N.	1499-1502A	Silberstein, R.P.	277-282A
Lange, K.W.	109-116B	Mukherjee, K.	1443-1450A	Queneau, P.B.	433-440B	Simkovich, G.	2147-2154A
Langer, J.S.	961-966A	Mullins, F.D.	1763-1767A	Raghavan, M.	783-792A	Simpson, M.	245-246A
Lankford, J.	1579-1588A	Murakami, Y.	2029-2038A	Rajan, K.	1299-1302A	Sinha, S.N.	2095-2097A
Laribalester, D.C.	843-852A	Murray, G.T.	597-600A	Ranucci, D.	1339-1345A	Sivior, N.G.	441-449B
Lark, K.A.	481-486A	Murray, J.L.	261-268A	Rao, Y.K.	1331-1334A	Sohn, H.Y.	595-598B
Larson, D.J., Jr.	2147-2154A	Nagamori, M.	444-449B	Rapp, R.A.	195B	Solecki, A.	1311-1317A
Laughlin, D.E.	939-941A	Nair, S.V.	1865-1871A	Rastogi, P.K.	257-260A	Soliman, M.S.	403-406B
Le, Y.	1165-1171A	Naito, T.	1431-1436A	Raynaud, G.M.	573-586A	Sombroek, K.	1893-1904A
Lee, D.	1777-1779A	Nakahara, S.	1963-1967A	Reddy, R.G.	33-37B	Song, Y.-D.	967-975A
Lee, D.Y.	1415-1430A	Narayan, C.	861-865A	Rehm, R.G.	345-349B	Spitzig, W.A.	1503-1505A
Lee, E.W.	511-517A	Nelson, J.G.	867-874A	Reilly, I.G.	726-729B	Sponholz, R.O.	1231-1232A
	555-563A	Newman, R.C.	597-600A	Reuben, R.L.	639-648A	Spurling, R.A.	813-817A
Lee, H.-C.	734-736B	Niasong, X.	2101-2102A	Rey, P.	433-440B	Squires, D.R.	1947-1948A
Lee, H.G.	396-400B	Nishizawa, T.	1819-1828A	Richards, G.G.	77-89B	Sridhar Rao, Ch.	259-275B
Lee, M.	2241-2246A	Noguchi, A.	33-41A	Richartz, W.	529-533B	Srinivasan, V.	481-486A
Lee, R.G.H.	243-250B	Numata, H.	39-46B	Ricou, R.	471-478B	Sriramamurthy, A.M.	1905-1919A
L'Esperance, G.	913-922A	Núñez, C.	229-233B	Ridley, N.	1019-1036A	St. John, D.H.	701-708B
Leverant, G.R.	923-929A	O'Brien, T.	117-125B	Riggsbee, J.M.	719-728A	Staiffansson, L.-I.	709-717B
	1389-1396A	Ochiai, S.	173-181A	Rioja, R.J.	939-941A	Stark, J.P.	1415-1430A
Li, W.-X.	2087-2092A	Ogawa, O.	535-541B	Ritter, A.M.	1193-1207A	Starke, E.A., Jr.	511-517A
Liang, W.W.	403-405A	Ogino, Y.	519-526A	Roberts, W.T.	913-922A		555-563A
Liau, P.K.	693-699A	Ogura, T.	835-842A	Robertson, I.M.	269-276A	Strid, J.	33-41A
Liddell, K.C.	213-219B	Okabayashi, K.	1563-1570A	Robinson, S.L.	1353-1357A	Sue, J.J.	283-286A
Liebermann, H.H.	155-161B	Okabe, T.	2247-2249A	Rodrigues, C.A.V.	1955-1958A	Sukieniak, M.Z.	677-680B
Lin, F.-S.	1873-1881A	Okazaki, M.	609-615B	deA.	2193-2203A	Sure, G.N.	1613-1621A
Lin, F.S.	1209-1220A	Okukawa, A.	1731-1739A	Rogers, G.D.	581-589B	Sure, G.N.	369-379A
	1229-1245A	Olesinski, R.W.	667-680B	Romig, A.D., Jr.	1319-1330A	Suzuki, T.	1193-1207A
Lindholm, U.S.	2097-2101A	Oliver, W.C.	2221-2229A	Rosén, E.	511-516B	Swaminathan, K.	173-181A
Lipsitt, H.A.	481-486A	O'Neal, J.E.	237-240A	Rozendaal, H.C.F.	627-637A	Szekely, J.	259-275B
	395-399A	O'Neill, J.E.	1451-1463A	Rutter, J.W.	245-246A		633-640B
Liu, C.T.	701-706A	Ogawa, T.	1451-1463A	Ryan, N.D.	1855-1864A		183-186B
Liu, J.M.	1247-1251A	Ogino, Y.	173-181A				59-70B
	1253-1258A	Ozturk, B.	245-246A				
	1289-1292A						
Livesey, D.W.	1443-1450A	Owen, C.V.	337-344B	Sabatini, R.L.	1941-1946A	Tabuchi, S.	351-356B
Loberg, B.	33-41A	Oya, Y.	147-153A	Sadanand, K.	527-539A	Tähtinen, S.	2205-2211A
Lograsso, T.A.	1003-1012A	Packer, C.M.	1741-1752A	Sagoe-Crentsil, K.K.	1969-1975A	Takagi, H.	1273-1280A
Loretto, M.H.	913-922A	Page, R.A.	11-22A	Sakakibara, Y.	250-251A	Takayama, T.	1819-1828A
Loria, E.A.	1507-1509A	Pahl, R.G., Jr.	1389-1396A	Samarakoseka, I.V.	307-318B	Takeuchi, E.	493-509B
Lou, M.Y.-W.	1491-1493A	Pajdowski, L.	1397-1405A	Sample, A.K.	2163-2173A	Tan, T.C.	719-723B
Louis, E.	389-391A	Pak, C.S.L.	1519-1529A	Samuel, F.H.	1807-1817A	Tabane, T.	127-133B
Lu, M.	735-746A	Panda, B.	755-756A	Sandvik, B.P.J.	1555-1562A	Taplin, D.M.R.	1437-1441A
Lu, S.-Z.	459-469A	Pandey, M.C.	487-494A	Sano, N.	351-356B	Tarassoff, P.	1763-1767A
Lütferring, G.	1597-1605A	Parker, J.S.	1437-1441A	Sasaki, Y.	563-571B	Tartaglia, J.M.	411-432B
Lyudkovsky, G.	257-260A	Parhasarathy, T.A.	1763-1767A	Sastray, S.M.L.	1451-1463A	Taub, A.I.	33-41A
Mahulikar, D.	209-215A	Pate, N.E.	11-22A	Savage, W.F.	1465-1474A	Tazunoki, Y.	2029-2038A
Makino, A.	1563-1570A	Patterson, D.	1389-1396A	Scanlon, J.C.	1339-1351A	Tench, D.	2039-2040A
Maples, A.L.	163-172B	Pawlak, M.	1075-1080A	Scarsbrook, G.	1299-1302A	Tewari, S.N.	1905-1919A
Marcus, H.L.	1415-1430A	Park, J.K.	1531-1543A	Schaefer, R.J.	1987-1997A	Thomas, B.G.	307-318B
	209-215A	Park, J.S.	155-171A		2109-2115A	Thomas, M.T.	853-860A
Margolin, H.	155-171A	Parsey, J.M., Jr.	1963-1967A		55-66A	Thompson, A.W.	931-937A
Marra, C.W.	1787-1805A	Parthasarathy, T.A.	1485-1490A			Tien, J.K.	1865-1871A
Marshall, D.	43-54A	Paton, N.E.	813-817A			Tiitto, K.	241-243A
Martin, J.W.	1711-1719A	Pearson, D.D.	1037-1045A			Toksoy, C.	755-756A
Martinez, L.	246-247A	Pelloux, R.M.	107-120A			Tomita, Y.	2247-2249A
Martins, G.S.	1496-1499A	Peng, T.C.	1465-1474A			Topor, L.	203-208A
Mason, J.T.	967-975A	Perepecko, J.H.	437-447A				573-580B
	1665-1676A	Perkins, J.	313-321A				
Massalski, T.B.	421-425A	Peters, C.R.	2101-2102A				
Masumoto, T.	1563-1570A	Peters, M.	1597-1605A				
Mataya, M.C.	347-364A	Petrich, J.B.	1589-1596A				
Matlock, D.K.	1221-1228A	Petzow, G.	1111-1116A				
Matson, L.E.	2241-2246A	Piehler, H.R.	1699-1704A				
Matthew, S.P.	701-708B	Pilett, H.M.	547-562B				
	709-717B	Poirier, R.G.	547-562B				
Mazumder, J.	2175-2184A	Pinsky, D.A.	381-388A				
McCartney, D.G.	983-994A	Pirot, C.R.	2093-2095A				
McDonald, M.L.	1787-1805A	Pitrich, R.G.	173-181B				
McFadden, G.B.	2117-2124A	Pitrich, R.G.	2139-2145A				
	2125-2137A	Pitrich, R.G.	2155-2161A				
McGinn, P.J.	1099-1102A						
McKelliget, J.	59-70B						
McLellan, R.B.	199-202A						
McNallan, M.J.	403-405A						
McQueen, H.J.	1855-1864A						
	725-726B						
Mendiratta, M.G.	395-399A						
Meredith, S.E.	243-250B						
Meschter, P.J.	237-240A						
	1451-1463A						
Meyer, J.-L.	471-478B						
Meyrick, G.	495-499A						
Michael, J.R.	99-105A						
Miller, A.E.	1099-1102A						
Mimura, T.	1147-1153A						
Miracle, D.B.	481-486A						
Mitra, U.	217-227A						
Mittemeijer, E.J.	627-637A						

Van Rooyen, G.T. 2185-2191A
Vander Sande, J.B. 819-833A
Varma, S.K. 1502-1503A
Varschavsky, A. 1999-2008A
Vasudévan, A.K. 369-379A
Vaughn, G.A. 783-792A
Verhoeven, J.D. 1037-1045A
1047-1054A
1665-1676A
283-286A

Verstraeten, P. 23-34B
Vihals, J. 221-228B
Viswanathan, R. 23-28A
Vives, C. 734-736B
Voorhees, P.W. 995-1001A
1081-1088A

Wadsworth, J. 1741-1752A
Wadsworth, M.E. 289-297B
Wagoner, R.H. 1265-1271A
Wallace, W. 339-345A
501-510A

Walters, K.W. 149-153B
Warren, G.W. 235-242B
289-297B
5-12B

Watanabe, S. 357-368B
Wayman, C.M. 621-626A
1155-1163A
269-276A
1353-1357A
1555-1562A

Webster, D. 406A
Wei, R.P. 735-746A
Weinberg, F. 681-684B
479-485B
739-741B

Weirick, L.J. 1319-1330A
Weiss, B.Z. 609-620A
Weiss, I. 1493-1496A

West, A.W. 843-852A
White, J. 2039-2040A
Whitlow, G.A. 23-28A

Whittenberger, J.D. 1753-1762A
Whyte, J.R., Jr. 617-622B
Willett, K.P. 229-236A

Williams, D.B. 99-105A
Williams, J.C. 931-937A
1589-1596A

Willits, B.L. 1502-1503A
Wilson, B.W. 1311-1317A
Wilson, D.V. 913-922A
923-929A

Wilson, E.A. 1947-1948A
Wilson, R.D. 695-700B
732-734B

Winegard, W.C. 1515-1517A
Wise, J. 2007-2101A
Wo, G. 1359-1366A

Wood, J.V. 471-480A
Wray, P.J. 2009-2019A
2041-2058A
2059-2073A

Wycliffe, P. 1499-1502A

Yacamán, M.J. 1485-1490A
Yamasaki, T. 519-526A
Yamauchi, I. 739-741B
Yang, D.Z. 1555-1562A
Yang, M.M. 1545-1554A
Yao, J. 729-733A
Yoder, G.R. 183-197A
Yoon, D.N. 1075-1080A
1503-1505A

Yoshida, H. 396-400B
Yoshii, K. 1273-1280A
Young, M.S.S. 1963-1967A
Yu, W. 875-888A
889-900A

Yuen, J.L. 1769-1775A

Zanner, F.J. 117-125B
Zhang, Y.-G. 2087-2092A
Zovas, P.E. 1103-1110A

Combined Subject Index

Absorption (material)		Alkaline earth metals
Distribution of Lead Between Copper and Matte and the Activity of PbS in Copper-Saturated Matte.	441-449B	See Beryllium Calcium Magnesium Strontium
Hydride Precipitation and Dislocation Substructures in Ti—5Al—2.5Sn.	813-817A	
Acid leaching		Alkaline leaching
See Hydrochloric acid leaching Sulfuric acid leaching		See Ammonia pressure leaching
Acoustic emission		Alloy steels
Determination of the Sources of Acoustic Emission Generated During the Deformation of Titanium.	1849-1853A	See Austenitic stainless steels Chromium molybdenum steels Chromium molybdenum vanadium steels Chromium steels Electrical steels Ferritic stainless steels High strength low alloy steels High strength steels Low alloy steels Martensitic stainless steels Nickel chromium molybdenum steels Nickel chromium steels Nickel steels Precipitation hardening steels Silicon steels Stainless steels
Activinide metal alloys		
See Uranium base alloys		Alloying
Activated sintering		See Microalloying Surface alloying
Retarded Grain Boundary Mobility in Activated Sintered Molybdenum.	1103-1110A	
Activation energy		Alloys
Kinetics of Methane Bubble Growth in a 1020 Steel.	487-494A	See Dispersion hardening alloys Ferrous alloys Master alloys Nonferrous alloys Precipitation hardening alloys Superalloys
Kinetics of Precipitation From Quenched Low-Carbon Steel.	1147-1153A	
Activity (chemical)		Alpha annealing
The Determination of the Thermodynamics of the NaF—AlF ₃ —Al ₂ O ₃ System With a Solid Electrolyte Cell.	135-139B	See Annealing
Activities of Oxygen in Liquid Bi—Pb and Bi—Sb Alloys.	141-147B	Alpha iron, Heat treatment
Activity Coefficient of Oxygen in Copper—Sulfur Melts.	337-344B	Consequences of the Heterogeneous Nitriding of Alpha-Iron: Dislocation Production and Oriented Precipitation.
Activity Coefficient of CuO _{0.5} in Alumina-Saturated Iron Silicate Slags.	345-349B	627-637A
Thermodynamics of Phosphate and Phosphide in CaO—CaF ₂ Melts.	351-356B	Alphatizing
Activity of SnS in Copper-Saturated Matte.	595-598B	See Annealing
Activity coefficients		Alumina
See Activity (chemical)		See Aluminum oxide
Additives		Aluminum, Alloying additive
See Master alloys		The Role of Alloy Composition on the Stability of Nitrides in Titanium-Microalloyed Steels During Weld Thermal Cycles.
Adhesion		33-41A
ribbon—Substrate Adhesion Dynamics in Chill Block Melt-Spinning Processes.	155-161B	Aluminum, Alloying elements
Adhesivity		Slip Directions in B2 Fe—Al Alloys.
See Adhesion		The Structure of Extruded NiAl.
Admiralty metal, Corrosion		A Quantitative Assessment of the Hardenability Increase Resulting From a Superhardenability Treatment.
The Influence of Deformation Path on the Slow Strain-Rate Stress Corrosion Cracking of Admiralty Brass Sheet.	1281-1286A	2185-2191A
Absorption, Stress effects		Aluminum, Casting
Influence of Stress on H ₂ S Adsorption on Iron.	853-860A	Steady Low of Liquid Aluminum in a Rectangular-Vertical Ingot Mold, Thermally or Electromagnetically Activated.
Aerospace		471-478B
Effect of Microstructure, Strength and Oxygen Content on Fatigue Crack Growth Rate of Ti—4.5Al—5.0Mo—1.5Cr (CORONA 5).	183-197A	Aluminum, Coatings
Age hardening		Heat Transfer and Fluid Flow in Plasma Spraying.
See Precipitation hardening		59-70B
Age hardening steels		Aluminum, Crystal growth
See Precipitation hardening steels		Recrystallization in Commercially Pure Aluminum.
Age softening		Numerical Treatment of Rapid Solidification.
See Overaging		Subgrain Growth in Aluminum During Static Annealing.
Agents		A Two-Dimensional Transient Model for Convection in Laser Melted Pool.
See Catalysts		2175-2184A
Agglomeration		Aluminum, Diffusion
See Sintering (roasting)		The Room-Temperature Effective Diffusivity of Hydrogen in Vapor-Deposited Aluminum.
Aging		1953-1955A
See Aging (artificial)		Aluminum, Extraction
Overaging		Reactions in Hall Smelting Cell Potlining.
Quench aging		Simulating the Process of Carbon Anode Baking Used in the Aluminum Industry.
Aging (artificial)		Chlorination of Alumina in Kaolinitic Clay.
Modulated Microstructures in Copper—Zinc and Copper—Aluminum—Nickel.	269-276A	Mössbauer Spectroscopy Used to Study the Removal of Iron From Clay.
Mechanisms of Slow Fatigue Crack Growth in High-Strength Aluminum Alloys: Role of Microstructure and Environment.	369-379A	732-734B
Effect of Retrogression and Reaging Treatments on the Microstructure of Al-7075-T651.	1531-1543A	Aluminum, Reactions (chemical)
The Stabilization of Martensite in Cu—Zn—Al Shape Memory Alloys.	1977-1986A	The Determination of the Thermodynamics of the NaF—AlF ₃ —Al ₂ O ₃ System With a Solid Electrolyte Cell.
Agitation		135-139B
See Electromagnetic stirring		Aluminum, Ternary systems
Alkali metal compounds		The Grain Refining of Aluminum and Phase Relationships in the Al—Ti—B System.
See also Potassium compounds		Nickel—Aluminum—Molybdenum Phase Equilibria.
Sodium chloride		The Liquidus Surface for the Al—Li—Si System From 0.20% Lithium and 0.20% Silicon.
Alkali metal compounds, Reactions (chemical)		Crystallization Studies in the Aluminum-Rich Corner of the Aluminum—Iron—Manganese System.
The Effects of CO and CO ₂ on the Rate of Na ₂ CO ₃ Catalyzed Boudouard Reaction.	400-403B	Miscibility Gap in Fe—Ni—Al and Fe—Ni—Al—Co Systems.
Alkali metals		Aluminum base alloys, Composite materials
See Lithium		Creep Rupture of a Silicon Carbide Reinforced Aluminum Composite.
Sodium		Correction to "Effect of Lithium on the Mechanical Properties and Microstructure of SiC Whisker Reinforced Aluminum Alloys".
Alkaline earth metal alloys		139-146A
See Magnesium base alloys		406A
Strontium		
Alkaline earth metal compounds		
See Magnesium oxide		

Aluminum base alloys

Aluminum base alloys, Crystal growth		
Convection in the Two-Phase Zone of Solidifying Alloys.	163-172B	
The Grain Refining of Aluminum and Phase Relationships in the Al—Ti—B System.	277-282A	
Aluminum base alloys, Directional solidification		
The Solidification of Monotectic Alloys—Microstructures and Phase Spacings.	1003-1012A	
Interlamellar Spacing in Directionally Solidified Eutectic Thin Films.	1013-1017A	
Aluminum base alloys, Heat treatment		
An Electron Microscope Study of the Featureless Zone Obtained During Rapid Solidification.	29-31A	
Effect of Retrogression and Reaging Treatments on the Microstructure of Al-7075-T651.	1531-1543A	
Aluminum base alloys, Machining		
Determination of Strain Distributions in Machined Chips.	1777-1779A	
Aluminum base alloys, Mechanical properties		
A Study of Creep Crack Growth in 2219-T851 Aluminum Alloy Using a Computerized Testing System.	107-120A	
Localized Necking of Sheet at Negative Minor Strains.	323-329A	
Mechanisms of Slow Fatigue Crack Growth in High-Strength Aluminum Alloys: Role of Microstructure and Environment.	369-379A	
The Effect of Microstructure and Environment on Fatigue Crack Closure of 7475 Aluminum Alloy.	555-563A	
Tensile Properties of a 2014 Aluminum Alloy in the Temperature Range 250 to 500°C.	913-922A	
The Effect of Minor Alloying Elements on the Mechanical Properties of Al—Cu—Li Alloys.	1209-1220A	
Dislocation-Depth Distribution in High-Temperature Creep.	1571-1577A	
The Influence of Crack Tip Plasticity in the Growth of Small Fatigue Cracks.	1579-1588A	
Creep Transitions in an Al—Zn Alloy	1893-1904A	
Existence of the Coaxing Effect and Effects of Small Artificial Holes on Fatigue Strength of an Aluminum Alloy and 70-30 Brass.	2029-2038A	
Aluminum base alloys, Metal working		
An Analysis of Biaxial Stretching of a Flat Sheet.	133-138A	
Punch-Stretching Behavior of a 2014 Aluminum Alloy in the Temperature Range 250 to 500°C.	923-929A	
Aluminum base alloys, Microstructure		
The Effect of Fluid Flow on the Eutectic Lamellar Spacing.	307-312A	
Modification in the Aluminum—Silicon System.	459-469A	
Ostwald Ripening and Relaxation in Dendritic Structures.	995-1001A	
Aluminum base alloys, Phase transformations		
Interlamellar Spacing in Discontinuous Precipitation.	1055-1062A	
Precipitation in Rapidly Solidified Al—Mn Alloys.	1987-1997A	
Aluminum base alloys, Powder technology		
The Microstructure and Tensile Properties of a Splat-Quenched Al—Cu—Li—Mg—Zr Alloy.	1367-1377A	
Local Microstructural Modification in Dynamically Consolidated Metal Powders.	1653-1664A	
Aluminum base alloys, Structural hardening		
Calorimetric Studies of Al—Cu Alloys: Quench Sensitivity and Sample Preparation.	389-391A	
Shape Changes During Dissolution of Theta Prime-CuAl ₂ .	449-458A	
Metastable Phases in the Early Stage of Precipitation in Al—Mg Alloys.	835-842A	
Effects of Fatigue on the G—P Zones in Al—Zn Alloys.	1519-1529A	
Dissolution Kinetics of Widmanstätten Gamma-Ag ₃ Al Precipitates.	1969-1975A	
Aluminum base alloys, Welding		
Metal Vaporization From Weld Pools.	461-469B	
Heat Flow During the Autogenous GTA Welding of Pipes.	1165-1171A	
Aluminum brasses, Phase transformations		
The Stabilization of Martensite in Cu—Zn—Al Shape Memory Alloys.	1977-1986A	
Aluminum compounds		
See also Aluminum oxide		
Aluminum compounds, Mechanical properties		
Improved Strength and Ductility in Ni ₃ Al by Boron Modification and Rapid Solidification.	399-402A	
Deformation in Ti ₃ Al Fatigued at Room and Elevated Temperatures.	1721-1729A	
Aluminum killed steels, Casting		
Thermodynamics of Nozzle Blockage in Continuous Casting of Calcium-Containing Steels.	547-562B	
Correction to Thermodynamics of Nozzle Blockage in Continuous Casting of Calcium-Containing Steels.	547-562B	
Aluminum killed steels, Diffusion		
Segregation of Manganese During Intercritical Annealing of Dual-Phase Steels.	1499-1502A	
Aluminum killed steels, Metal working		
An Analysis of Biaxial Stretching of a Flat Sheet.	133-138A	
Aluminum oxide, Composite materials		
Critical Stress Intensity for Off-Axis Fracture of Al ₂ O ₃ —Fiber-Reinforced Magnesium.	756-760A	
Tensile and Fatigue Behavior of Aluminum Oxide Fiber-Reinforced Magnesium Composites. I.—Fiber Fraction and Orientation.	1389-1396A	
Tensile and Fatigue Behavior of Aluminum Oxide Fiber-Reinforced Magnesium Composites. II.—Alloying Effects.	1397-1405A	
Aluminum oxide, Reactions (chemical)		
Chlorination of Alumina in Kaolinitic Clay.	529-533B	
Ammonia pressure leaching		
The Electrochemical Oxidation of Chalcopyrite in Ammoniacal Solutions.	289-297B	
		Recovery of Elemental Sulfur During the Oxidative Ammoniacal Leaching of Chalcopyrite.
		726-729B
Amorphous materials		
See Metallic glasses		
Amplifiers		
See Lasers		
Analyzing		
See Mathematical analysis		
Statistical analysis		
Thermal analysis		
X ray stress analysis		
Andrade method		
See Crystal growth		
Androforming		
See Stretch forming		
Angular velocity		
See Rotation		
Annealing		
See also Continuous annealing		
Isothermal annealing		
Chromium Depletion in the Vicinity of Carbides in Sensitized Austenitic Stainless Steels.		793-811A
Segregation of Manganese During Intercritical Annealing of Dual-Phase Steels.		1499-1502A
Subgrain Growth in Aluminum During Static Annealing.		1502-1503A
Anodes		
Simulating the Process of Carbon Anode Baking Used in the Aluminum Industry.		487-492B
Anodic dissolution		
The Electrochemical Oxidation of Chalcopyrite in Ammoniacal Solutions.		289-297B
Antidomains		
See Domains		
Antimony, Alloying additive		
Effect of Antimony on Recrystallization Behavior and Magnetic Properties of a Nonoriented Silicon Steel.		257-260A
Antimony, Dopants		
Effects of the Additions of Boron, Phosphorus, Tin and Antimony on Oxygen-Assisted Hydrogen Embrittlement of Nickel.		519-526A
Antimony, Solubility		
Equilibrium Between Silica-Saturated Iron Silicate Slags and Molten Cu—As, Cu—Sb and Cu—Bi Alloys.		535-541B
Arc welding		
See Gas tungsten arc welding		
Submerged arc welding		
Arc welds		
See Welded joints		
Argon arc welding		
See Gas tungsten arc welding		
Arrhenius activation energy		
See Activation energy		
Arsenic, Solubility		
Equilibrium Between Silica-Saturated Iron Silicate Slags and Molten Cu—As, Cu—Sb and Cu—Bi Alloys.		535-541B
Artificial aging		
See Aging (artificial)		
Atmospheres		
See Controlled atmospheres		
Inert atmospheres		
Atomic diffusion		
See Diffusion		
Atomization		
See Atomizing		
Atomizing		
Rapidly Solidified Prealloyed Powders by Laser Spin Atomization.		149-153B
Attack (chemical)		
See Chemical attack		
Austenite, Phase transformations		
The Isothermal Decomposition of Austenite in Hot Rolled Microalloyed Steels.		1137-1145A
Austenite, Solubility		
Solubility Product for Niobium Carbide in Austenite.		541-544A
Solubility of Niobium Carbide and Niobium Carbonitride in Alloyed Austenite and Ferrite.		545-553A
Austenitic stainless steels, Coatings		
Embrittlement of Types 316L and 347 Weld Overlay by Post-Weld Heat Treatment and Hydrogen.		1475-1484A
Austenitic stainless steels, Forging		
The Effect of Hot Working on Structure and Strength of a Precipitation Strengthened Austenitic Stainless Steel.		347-368A
Austenitic stainless steels, Heat treatment		
Chromium Depletion in the Vicinity of Carbides in Sensitized Austenitic Stainless Steels.		793-811A
Austenitic stainless steels, Mechanical properties		
Behavior of Fe—Ni—Cr Alloys in a Complex Multioxident Environment Under Conditions of Dynamic Straining.		11-22A
Hydrogen-Induced Slow Crack Growth in Stable Austenitic Stainless Steels.		729-733A

Brasses

The Effect of One Slow—Fast Strain Cycle on the Fatigue Crack Growth Behavior of SUS 304 Stainless Steel at Elevated Temperature	1731-1739A	Billets, Crystal growth	Fluid Flow From a Low to a Higher Density Liquid.	681-684B
Influence of Nitrogen Alloying on Hydrogen Embrittlement in AISI 304 Type Stainless Steels.	2205-2211A	Binary systems, Phase transformations	Solute Stabilization for H.C.P.-F.C.C. Transitions: Co—Mo.	67-72A
The Wear Behavior of Nitrogen-Implanted Metals.	2221-2229A	Binary systems, Phases (state of matter)	Calculations of Stable and Metastable Equilibrium Diagrams of the Ag—Cu and Cd—Zn Systems.	261-268A
Austenitic stainless steels, Phases (state of matter)		A Generalized Approach to the Flood—Knapp Structure Based Model for Binary Liquid Silicates: Application and Update for the PbO—SiO ₂ System.	511-516B	
Correction to "The Kinetics of Sigma-Phase Precipitation in AISI 310 and AISI 316 Steels".	406A	Thermodynamic Analysis of the Iron—Copper System. I.—The Stable and Metastable Phase Equilibria.	1921-1930A	
High-Temperature Phase Chemistries and Solidification Mode Prediction in Nitrogen-Strengthened Austenitic Stainless Steels.	1339-1351A	Binary systems, Physical properties	Thermochemistry of Binary Liquid Gold Alloys: the Systems Gold—Copper and Gold—Silver at 1379K.	203-208A
Austenitic stainless steels, Powder technology		Bismuth, Diffusion	An Analytical Electron Microscope Study of the Kinetics of the Equilibrium Segregation of Bismuth in Copper.	99-105A
Rapid Solidification of a Droplet-Processed Stainless Steel.	819-833A	Bismuth, Solubility	Equilibrium Between Silica-Saturated Iron Silicate Slags and Molten Cu—As, Cu—Sb and Cu—Bi Alloys.	535-541B
Austenitic stainless steels, Reactions (chemical)		Bismuth base alloys, Crystal growth	Studies of Directionally Solidified Eutectic Bi/MnBi at Low Growth Velocities.	2139-2145A
Hydrogen Attack in an Austenitic Stainless Steel.	1485-1490A	Thermoelectric and Morphological Effects of Peltier Pulsing on Directional Solidification of Eutectic Bi/Mn.	2147-2154A	
Austenitic stainless steels, Welding		Effect of Applied Magnetic Fields During Directional Solidification of Eutectic Bi/Mn.	2155-2161A	
Alloying Element Vaporization and Weld Pool Temperature During Laser Welding of AISI 202 Stainless Steel.	641-644B	Bismuth base alloys, Reactions (chemical)	Activities of Oxygen in Liquid Bi—Pb and Bi—Sb Alloys.	141-147B
Austenitizing		Bismuth compounds, Single crystals	Bismuth Precipitation in "Monocrystalline" InBi.	1963-1967A
Effect of Prior Cold Work on the Martensite Transformation in SAE 52100.	299-306A	Blades	See Turbine blades	
The Effect of Furnace Atmosphere Carbon Potential on the Development of Residual Stresses in 52100 Bearing Steel.	2101-2102A	Blades (cutting), Mechanical properties	Microstructure and Its Effect on Toughness and Wear Resistance of Laser Surface Melted and Post-Heat Treated High-Speed Steel.	1829-1835A
A Quantitative Assessment of the Hardenability Increase Resulting From a Superhardenability Treatment.	2185-2191A	Blankets (atmospheres)	See Controlled atmospheres	
Auto oxidation		Blast furnace chemistry	Phase Relationships in the System Fe—Na—O.	319-327B
See Oxidation		Reduction of Silica in Coke With Ash of Increased Basicity.	729-732B	
Autoclaving		Blast furnaces	Exergy Analysis of a Chemical Metallurgical Process.	645-654B
Control of Autoclave Scaling During Acid Pressure Leaching of Nickeliferous Laterite Ore.	433-440B	Blocking	Thermodynamics of Nozzle Blockage in Continuous Casting of Calcium-Containing Steels.	547-562B
Autodiffusion		Correction to Thermodynamics of Nozzle Blockage in Continuous Casting of Calcium-Containing Steels.	547-562B	
See Diffusion		Blowing	A New Approach to Investigate the Drop Size Distribution in Basic Oxygen Steelmaking.	109-116B
Automatic control		Boiler scale	See Scale (corrosion)	
See Computer control		Boron, Alloying elements	Improved Strength and Ductility in Ni ₃ Al by Boron Modification and Rapid Solidification.	399-402A
Axial stress		Boron, Composite materials	Environmentally Influenced Mixed Mode Fatigue Crack Propagation of Titanium Metal/Matrix Composites.	209-215A
Biaxial Deformation of 70-30 Brass: Flow Behaviors, Texture, Microstructures.	1607-1612A	Boron, Dopants	Effects of the Additions of Boron, Phosphorus, Tin and Antimony on Oxygen-Assisted Hydrogen Embrittlement of Nickel.	519-526A
Baking		Boron, Ternary systems	The Grain Refining of Aluminum and Phase Relationships in the Al—Ti—B System.	277-282A
Simulating the Process of Carbon Anode Baking Used in the Aluminum Industry.	487-492B	Boron, Trace elements	Segregation and Influence of Boron on the Impact Toughness to Ti—6Al—2Nb—1Ta—0.8Mo Welds and Castings.	1505-1507A
Band theory		Boron carbide, Composite materials	Environmentally Influenced Mixed Mode Fatigue Crack Propagation of Titanium Metal/Matrix Composites.	209-215A
Thermodynamics of Several Lewis-Acid-Base Stabilized Transition Metal Alloys.	2075-2085A	Boron compounds	See Boron carbide	
Banded structure		BOS process	See Oxygen steel making	
Structural Effects and Band Segregate Formation During the Electromagnetic Stirring of Strand-Cast Steel.	581-589B	Bottom blown converters	Mixing of Concentric Gas Jets Issuing Vertically Into a Liquid.	71-75B
Magnetization Measurement Associated With Gamma + Alpha Martensitic Transformation of Iron Particles in a Cu—1.59Fe Alloy.	755-756A	Boundaries	See Grain boundaries Grain sub boundaries Phase boundary	
Basic converters		Brasses	See also Admiralty metal Aluminum brasses	
See LD converters		Brasses, Mechanical properties	Localized Necking of Sheet at Negative Minor Strains.	323-329A
Basic oxygen processes		Biaxial Deformation of 70-30 Brass: Flow Behaviors, Texture, Microstructures.	1607-1612A	
See Oxygen steel making				
Basic oxygen steel making				
See Oxygen steel making				
Batch type furnaces				
See Bottom blown converters				
Copper converters				
LD converters				
Bauschinger effect				
The Role of Alpha and Beta Phases in Fatigue Crack Propagation of Ti—Mn Alloys.	155-171A			
Yielding Anisotropy From the Bauschinger Effect and Crystallographic Texture in Drawn HSLA Steel Sheet.	1699-1710A			
Bearing steels, Heat treatment				
The Effect of Furnace Atmosphere Carbon Potential on the Development of Residual Stresses in 52100 Bearing Steel.	2101-2102A			
Bearing steels, Mechanical properties				
The Wear Behavior of Nitrogen-Implanted Metals.	2221-2229A			
Bearing steels, Phase transformations				
Effect of Prior Cold Work on the Martensite Transformation in SAE 52100.	299-306A			
Bendability				
See Formability				
Beryllium, Alloying elements				
The Gamma Phase Boundary of CuBe Alloys.	939-941A			
Beryllium, Irradiation				
Metastable Alloys of Beryllium Prepared by Ion Implantation.	1787-1805A			
Beryllium, Melting				
Heat and Fluid Flow Phenomena in a Levitation Melted Sphere Under Zero Gravity.	183-186B			
Biaxial stress				
See Axial stress				
Bicrystals, Mechanical properties				
Dependence of Dynamic Fracture Resistance on Crack Velocity in Tungsten. II.—Bicrystals and Polycrystals.	1253-1258A			
Billet casting				
Structural Effects and Band Segregate Formation During the Electromagnetic Stirring of Strand-Cast Steel.	581-589B			

Brasses

Existence of the Coaxing Effect and Effects of Small Artificial Holes on Fatigue Strength of an Aluminum Alloy and 70-30 Brass.	2029-2038A	
Brazed joints, Microstructure		
Structure of Vacuum Brazed BNi-5 Joint of Inconel 718.	609-620A	
Brazing		
See Vacuum brazing		
Bridgman method		
See Crystal growth		
Brine		
See Salt water		
Brittle fracture		
Influence of Nitrogen Alloying on Hydrogen Embrittlement in AISI 304 Type Stainless Steels.	2205-2211A	
Brittle fracture, Microstructural effects		
The Influence of Microstructure on Brittle Fracture Toughness.	947-959A	
Brittleness		
See also Temper brittleness		
Brittleness, Microstructural effects		
A Microstructural Investigation of the Origin of Brittle Behavior in the Transverse Direction in Molybdenum-Based Alloy Bars.	1741-1752A	
Bubbles		
Kinetics of Methane Bubble Growth in a 1020 Steel.	487-494A	
Cadmium, Binary systems		
Calculations of Stable and Metastable Equilibrium Diagrams of the Ag—Cu and Cd—Zn Systems.	261-268A	
Cadmium, Ternary systems		
Thermodynamic Properties of Liquid Mg—In—Cd Ternary Solutions.	543-546B	
Cadmium base alloys, Directional solidification		
Interlamellar Spacing in Directionally Solidified Eutectic Thin Films.	1013-1017A	
Cakes (metal)		
See Ingots		
Calcining		
See Roasting		
Calcium, Alloying additive		
Thermodynamics of Nozzle Blockage in Continuous Casting of Calcium-Containing Steels.	547-562B	
Correction to Thermodynamics of Nozzle Blockage in Continuous Casting of Calcium-Containing Steels.	547-562B	
Calorimeters		
Calorimetric Studies of Al—Cu Alloys: Quench Sensitivity and Sample Preparation.	389-391A	
Carbides		
See also Boron carbide		
Chromium carbide		
Metal carbides		
Niobium carbide		
Silicon carbide		
Carbides, Diffusion		
Discussion of "Self-Diffusion Coefficients of Carbon in Fe ₃ C at 723K Via the Kinetics of Formation of This Compound (and Authors' Reply).	245-246A	
Carbon, Alloying elements		
Forced Velocity Pearlite in High-Purity Fe—C Alloys. I.—Experimental.	1037-1045A	
Carbon, Diffusion		
Discussion of "Self-Diffusion Coefficients of Carbon in Fe ₃ C at 723K Via the Kinetics of Formation of This Compound (and Authors' Reply).	245-246A	
Carbon, Reactions (chemical)		
Discussion of "Calculation Method of Equilibrium Composition in the Carbon—Hydrogen—Oxygen System and Its Application to Environments of a High-Temperature Gas Cooled Reactor": Authors Reply.	396-400B	
The Effects of CO and CO ₂ on the Rate of Na ₂ CO ₃ Catalyzed Boudouard Reaction.	400-403B	
Carbon, Ternary systems		
Phase Relationships in the Fe—Cr—C System at Solidification Temperatures.	663-676B	
Carbon compounds		
See Boron carbide		
Carbides		
Carbon dioxide		
Carbonitrides		
Chromium carbide		
Niobium carbide		
Carbon dioxide, Environment		
Isotope Exchange Studies of the Rate of Dissociation of CO ₂ on Liquid Iron Oxides and CaO-Saturated Calcium Ferrites.	563-571B	
Carbon dioxide, Reactions (chemical)		
The Effects of CO and CO ₂ on the Rate of Na ₂ CO ₃ Catalyzed Boudouard Reaction.	400-403B	
The Interfacial Kinetics of the Reaction of CO ₂ With Liquid Nickel.	655-661B	
Carbon dioxide, Solubility		
Interactions of Gases in Molten Salts: Carbon Dioxide and Oxygen in Cryolite Alumina Melts.	39-46B	
Carbon steels		
See also Aluminum killed steels		
Carbon steels, Crystal growth		
Numerical Models for Casting Solidification. I.—The Coupling of the Boundary Element and Finite Difference Methods for Solidification Problems.	91-99B	
Effect of Composition and Initial Grain Size on the Dynamic Recrystallization of Austenite in Plain Carbon Steels.	2099-2091A	
Carbon steels, Diffusion		
Kinetics of Methane Bubble Growth in a 1020 Steel.	487-494A	
The Effect of a Tin Barrier on the Permeability of Hydrogen Through Mild Steel and Ferritic Stainless Steel.	2093-2095A	
Carbon steels, Heat treatment		
Temper-Aging of Continuously Annealed Low-Carbon Dual-Phase Steel.	73-86A	
Carbon steels, Mechanical properties		
Effects of Prior Cold Rolling and Post-Temper Rolling on the Properties of Continuously Annealed Low-Carbon Dual-Phase Steel.	671-678A	
The Influence of Microstructure on Brittle Fracture Toughness.	947-959A	
Strain Hardening Behavior of Polycrystalline Iron and Low-Carbon Steels—a Statistical Analysis.	1185-1192A	
Effect of Shape of Sulfide Inclusions on Anisotropy of Inclusion Spacings and on Directionality of Ductility in Hot Rolled C—Mn Steels.	1259-1264A	
Residual Stress Evaluation With X-Rays in Steels Having Preferred Orientation.	1407-1414A	
High-Temperature Plastic-Flow Behavior of Mixtures of Austenite, Cementite, Ferrite and Pearlite in Plain-Carbon Steels.	2041-2058A	
Tensile Failure Behavior of Plain Carbon Steels at Elevated Temperatures.	2059-2073A	
Carbon steels, Microstructure		
Dislocation Substructure as a Function of Strain in a Dual-Phase Steel.	1221-1228A	
Grain Boundary Widmanstätten Ferrite Spacings in 0.2% Carbon Steel.	1643-1651A	
Carbon steels, Structural hardening		
Kinetics of Precipitation From Quenched Low-Carbon Steel.	1147-1153A	
Carbonates, Reactions (chemical)		
The Effects of CO and CO ₂ on the Rate of Na ₂ CO ₃ Catalyzed Boudouard Reaction.	400-403B	
Carbonitrides, Solubility		
Solubility of Niobium Carbide and Niobium Carbonitride in Alloyed Austenite and Ferrite.	545-553A	
Carbothermic reactions		
A Study of the Mechanisms of the Salt Catalyzed Carbo-chlorination of Kaolin.	695-700B	
Establishment of Product Morphology During the Initial Stages of Wustite Reduction.	709-717B	
Carburization		
See Carburizing		
Carburizing		
Discussion of "Self-Diffusion Coefficients of Carbon in Fe ₃ C at 723K Via the Kinetics of Formation of This Compound (and Authors' Reply).	245-246A	
Core Hardenability Calculations for Carburizing Steels.	1173-1183A	
Fatigue Behavior of Carburized Steel With Internal Oxides and Nonmartensitic Microstructure Near the Surface.	1431-1436A	
The Effect of Furnace Atmosphere Carbon Potential on the Development of Residual Stresses in 52100 Bearing Steel.	2101-2102A	
Case carburizing		
See Carburizing		
Case hardening		
See Carburizing		
Nitriding		
Cast iron		
See Gray iron		
Nodular iron		
Casting		
See Billet casting		
Continuous casting		
Ingot casting		
Melt spinning		
Slab casting		
Casting defects		
Structural Effects and Band Segregate Formation During the Electromagnetic Stirring of Strand-Cast Steel.	581-589B	
Strain Induced Cracking in Partially Solidified Tin—Lead Alloy.	739-741B	
Castings		
See also Continuous cast shapes		
Ingots		
Castings, Crystal growth		
Numerical Models for Casting Solidification. I.—The Coupling of the Boundary Element and Finite Difference Methods for Solidification Problems.	91-99B	
Numerical Models for Casting Solidification. II.—Application of the Boundary Element Method to Solidification Problems.	101-107B	
Castings, Microstructure		
Ostwald Ripening and Relaxation in Dendritic Structures.	995-1001A	
Catalysis		
The Effects of CO and CO ₂ on the Rate of Na ₂ CO ₃ Catalyzed Boudouard Reaction.	400-403B	

Catalysts	
The Effects of CO and CO ₂ on the Rate of Na ₂ CO ₃ Catalyzed Boudouard Reaction.	400-403B
Cathodes	
See also Fluidized bed cathodes	
Cathodes, Chemical analysis	
Reactions in Hall Smelting Cell Potlining.	277-280B
Cavitation	
Punch-Stretching Behavior of a 2014 Aluminum Alloy in the Temperature Range 250 to 500°C.	923-929A
Cavitation, Deformation effects	
Effect of Cavitation on Post-Deformation Tensile Properties of a Superplastic Copper-Based Alloy.	1443-1450A
Cavities	
See Holes	
Cells	
See Electrolytic cells	
Cellular precipitates	
Chromium Depletion in the Vicinity of Carbides in Sensitized Austenitic Stainless Steels.	793-811A
Interlamellar Spacing in Discontinuous Precipitation.	1055-1062A
CGF forging process	
See Forging	
Chalcogenides	
See Sulfides	
Chalcopyrite, Reactions (chemical)	
The Electrochemical Oxidation of Chalcopyrite in Ammoniacal Solutions.	289-297B
Chalcopyrite, Reduction (chemical)	
A Mathematical Model for Calculation of Equilibrium Solution Speciations for the FeCl ₃ —FeCl ₂ —CuCl ₂ —CuCl—HCl—NaCl—H ₂ O System at 25°C.	213-219B
Recovery of Elemental Sulfur During the Oxidative Ammoniacal Leaching of Chalcopyrite.	726-729B
Chapmanizing	
See Nitriding	
Charge density	
Electron Microscopy Studies of Charge Density Wave (CDW) Transitions in a Ti _{58.7} Ni _{37.5} Al _{3.8} Alloy.	1155-1163A
Charge transfer	
Charge Transfer at Fe/FeO(CaF ₂) Electrodes at 1450°C: Exchange Current Density, Electrode Capacitance, Diffusivity.	281-288B
Chemical attack	
Hydrogen Attack in an Austenitic Stainless Steel.	1485-1490A
Chemical composition, Welding effects	
Alloying Element Vaporization and Weld Pool Temperature During Laser Welding of AISI 202 Stainless Steel.	641-644B
Chemical equilibrium	
The Determination of the Thermodynamics of the NaF—AlF ₃ —Al ₂ O ₃ System With a Solid Electrolyte Cell.	135-139B
Discussion of "Calculation Method of Equilibrium Composition in the Carbon—Hydrogen—Oxygen System and Its Application to Environments of a High-Temperature Gas Cooled Reactor", Authors' Reply.	396-400B
Chemical etching	
A Grain Boundary Etching Method for the Analysis of Intergranular Phosphorus-Segregation in Iron-Based Alloys.	1563-1570A
Chemical finishing	
See Chemical etching	
Chemical kinetics	
See Reaction kinetics	
Chemical properties	
See Heat of formation	
Chemistry	
See Surface chemistry	
Thermochemistry	
Chip formation	
Determination of Strain Distributions in Machined Chips.	1777-1779A
Chipless machining	
See Electric discharge machining	
Chlorides	
See Hydrochloric acid	
Sodium chloride	
Chloridizing	
Chloridization Beneficiation of Ilmenite.	259-275B
Chlorination	
Chlorination of Cobalt in an Argon—1% Oxygen—1% Chlorine Mixture at 1000K.	403-405A
Chlorination of Alumina in Kaolinitic Clay.	529-533B
A Study of the Mechanisms of the Salt Catalyzed Carboclorination of Kaolin.	695-700B
Mössbauer Spectroscopy Used to Study the Removal of Iron From Clay.	732-734B
Chlorine, Environment	
Chlorination of Cobalt in an Argon—1% Oxygen—1% Chlorine Mixture at 1000K.	403-405A
Chromium	
Chromium Depletion in the Vicinity of Carbides in Sensitized Austenitic Stainless Steels.	793-811A
Chromium, Oxidation	
The High-Temperature Oxidation of Metals Forming Cation-Diffusing Scales.	195B
The High-Temperature Oxidation of Metals Forming Cation-Diffusing Scales.	765-782A
Chromium, Ternary systems	
Phase Relationships in the Fe—Cr—C System at Solidification Temperatures.	663-676B
Determination of Isothermal Sections of Nickel-Rich Portion of Ni—Cr—Mo System by Analytical Electron Microscopy.	783-792A
Chromium carbide, Thermal properties	
High-Temperature Thermodynamic Properties of the Chromium Carbides Cr ₇ C ₃ and Cr ₃ C ₂ Determined Using a Galvanic Cell Technique.	517-521B
Chromium compounds	
See Chromium carbide	
Chromium molybdenum nickel steels	
See Nickel chromium molybdenum steels	
Chromium molybdenum steels	
See also Chromium molybdenum vanadium steels	
Nickel chromium molybdenum steels	
Chromium molybdenum steels, Coating	
Embrittlement of Types 316L and 347 Weld Overlay by Post-Weld Heat Treatment and Hydrogen.	1475-1484A
Chromium molybdenum steels, Corrosion	
Effect of Tempering on the Carbon Activity and Hydrogen Attack Kinetics of 2.25Cr—1Mo Steel.	2021-2027A
Investigation of Stress Corrosion Cracking of Cast and Forged Steel in Water.	2087-2092A
Chromium molybdenum steels, Diffusion	
A Grain Boundary Etching Method for the Analysis of Intergranular Phosphorus-Segregation in Iron-Based Alloys.	1563-1570A
Chromium molybdenum steels, Mechanical properties	
Grain Boundary Composition and Associated Hydrogen Cracking of Modified 4130 Steels.	565-572A
Core Hardenability Calculations for Carburizing Steels.	1173-1183A
Fatigue Behavior of Carburized Steel With Internal Oxides and Nonmartensitic Microstructure Near the Surface.	1431-1436A
Chromium molybdenum vanadium steels, Mechanical properties	
Recovery of Creep Properties of a Vanadium-Strengthened Steel (1Cr1Mo0.75V1B) by Reheat Treatment.	707-718A
Chromium nickel molybdenum steels	
See Nickel chromium molybdenum steels	
Chromium nickel steels	
See Nickel chromium steels	
Chromium steels	
See also Austenitic stainless steels	
Chromium molybdenum steels	
Chromium molybdenum vanadium steels	
Ferritic stainless steels	
Martensitic stainless steels	
Nickel chromium molybdenum steels	
Nickel chromium steels	
Stainless steels	
Chromium steels, Heat treatment	
Discussion of "The Effect of Heat Treatments on the Corrosion Fatigue Properties of 13% Chromium Stainless Steel in 3% NaCl Aqueous Solution" (and Authors' Reply).	250-251A
Chromium steels, Mechanical properties	
Effect of Tempering on Quasistatic and Impact Fracture Toughness and Mechanical Properties for 5140 H Steel.	901-911A
Chromium vanadium steels	
See Chromium molybdenum vanadium steels	
Clay minerals	
See Kaolinite	
Closing	
See Blocking	
Coating	
See Copper plating	
Duplex plating	
Nickel plating	
Coatings	
See Diffusion coatings	
Electroplates	
Hot dip coatings	
Weld deposited coatings	
Cobalt, Binary systems	
Solute Stabilization for H.C.P.-F.C.C. Transitions: Co—Mo.	67-72A
Cobalt, Corrosion	
Chlorination of Cobalt in an Argon—1% Oxygen—1% Chlorine Mixture at 1000K.	403-405A
Cobalt, Extraction	
Control of Autoclave Scaling During Acid Pressure Leaching of Nickeliferous Laterite Ore.	433-440B
Cobalt, Quaternary systems	
Miscibility Gap in Fe—Ni—Al and Fe—Ni—Al—Co Systems.	1819-1828A
Cobalt, Thermal properties	
Thermochimistry of Binary Liquid Gold Alloys: the Systems Au—Ni, Au—Co, Au—Fe and Au—Mn.	573-580B
Cobalt base alloys, Crystal growth	
Nucleation of Recrystallization in a Co—Cr—Mo Alloy.	1335-1338A

Cobalt base alloys

Cobalt base alloys, Mechanical properties The Effects of a Liquid Sulfate/Chloride Environment on Superalloy Stress Rupture Properties at 704°C.	23-28A	Compressive properties, Temperature effects Elevated-Temperature Compressive Steady State Deformation and Failure in the Oxide Dispersion Strengthened Alloy MA 6000E.	1753-1762A
Cobalt base alloys, Metal working Flow and Fracture of a Multiphase Alloy MP35N for Study of Workability.	1837-1847A	Compressive strength, Microstructural effects The Mechanical Behavior of Nonstoichiometric Compounds Ni ₃ Si, Ni ₃ Ge and Fe ₃ Ga.	173-181A
Cobalt base alloys, Microstructure Microstructural Changes During Isothermal Forging of a Co—Cr—Mo Alloy.	339-345A	Compressive yield strength See Compressive strength	
Structure of Interphase Boundaries in a Eutectic Co—Al Alloy.	1623-1626A	Computer control A Study of Creep Crack Growth in 2219-T851 Aluminum Alloy Using a Computerized Testing System.	107-120A
Cobalt base alloys, Powder technology Carbide Composition Change During Liquid Phase Sintering of a Wear Resistant Alloy.	1099-1102A	Computer programs Convection in the Two-Phase Zone of Solidifying Alloys. Discussion of "Calculation Method of Equilibrium Composition in the Carbon—Hydrogen—Oxygen System and Its Application to Environments of a High-Temperature Gas Cooled Reactor"; Authors Reply.	163-172B
Cobalt compounds, Mechanical properties The Fracture of Ordered (Fe, Co) ₂ V.	701-706A	Computer simulation Simulating the Process of Carbon Anode Baking Used in the Aluminum Industry.	487-492B
Cobalt compounds, Reduction (chemical) Whisker Growth Reduction of Oxides.	685-694B	Interlamellar Spacing in Directionally Solidified Eutectic Thin Films.	1013-1017A
Coefficient of expansion See Thermal expansion		Ostwald Ripening During Liquid Phase Sintering—Effect of Volume Fraction on Coarsening Kinetics.	1081-1088A
Coefficient of thermal expansion See Thermal expansion		Concast See Continuous casting	
Coke See also Metallurgical coke		Concentration (composition) High-Temperature Phase Chemistry and Solidification Mode Prediction in Nitrogen-Strengthened Austenitic Stainless Steels.	1339-1351A
Coke, Oxidation The Effects of CO and CO ₂ on the Rate of Na ₂ CO ₃ Catalyzed Boudouard Reaction.	400-403B	Concentration (stress) See Stress concentration	
Coke breeze See Coke		Conducting See Conduction	
Cold ductility See Ductility		Conducting sheet analog See Heat transmission	
Cold formability See Formability		Conduction Comparison of Numerical Modeling Techniques for Complex, Two-Dimensional, Transient Heat-Conduction Problems.	307-318B
Cold forming See Cold working		Consolidation Local Microstructural Modification in Dynamically Consolidated Metal Powders.	1653-1664A
Cold reduction See Cold working		Constitutional diagrams See Phase diagrams	
Cold rolling Effects of Prior Cold Rolling and Post-Temper Rolling on the Properties of Continuously Annealed Low-Carbon Dual-Phase Steel.	671-678A	Consumption See Energy consumption	
Cold shortness See Brittleness		Continuous annealing Temper-Aging of Continuously Annealed Low-Carbon Dual-Phase Steel.	73-86A
Cold working See also Cold rolling		Effects of Prior Cold Rolling and Post-Temper Rolling on the Properties of Continuously Annealed Low-Carbon Dual-Phase Steel.	671-678A
Stretch forming			
Effect of Prior Cold Work on the Martensite Transformation in SAE 52100.	299-306A		
Microstructural Changes Produced in a Multifilamentary Nb/Ti Composite by Cold Work and Heat Treatment.	843-852A		
Crystallographic and Morphological Characteristics of Oxidation Growth Pits in Wustite Grown at 1200°C.	2241-2246A		
Columbium See Niobium			
Columbium base alloys See Niobium base alloys			
Columbium compounds See Niobium compounds			
Compacting See also Hot isostatic pressing			
On the Effect of NaCl on Porosity in Elemental-Blend Powder Metallurgy Ti—5Al—2.5Sn.	248-249A		
Compacts See Powder compacts			
Compliance (elasticity) See Modulus of elasticity			
Composite materials See also Fiber composites			
Composite materials, Mechanical properties Creep Rupture of a Silicon Carbide Reinforced Aluminum Composite.	139-146A		
Correction to "Effect of Lithium on the Mechanical Properties and Microstructure of SiC Whisker Reinforced Aluminum Alloys".	406A		
Composite materials, Superconductivity Effect of Tantalum Additions Upon <i>In Situ</i> Prepared Nb ₃ Sn—Cu Superconducting Wire.	283-286A		
Compositions See Chemical composition			
Compressing Precipitation of Nb(CN) During High-Strain Rate Compression Testing of a 0.07% Niobium-Bearing Austenite.	241-243A		
Compression See Compressing			
Compression strength See Compressive strength			
Compressive modulus See Modulus of elasticity			
Compressive properties, Temperature effects Elevated-Temperature Compressive Steady State Deformation and Failure in the Oxide Dispersion Strengthened Alloy MA 6000E.			
Compressive strength, Microstructural effects The Mechanical Behavior of Nonstoichiometric Compounds Ni ₃ Si, Ni ₃ Ge and Fe ₃ Ga.			
Compressive yield strength See Compressive strength			
Computer control A Study of Creep Crack Growth in 2219-T851 Aluminum Alloy Using a Computerized Testing System.			
Computer programs Convection in the Two-Phase Zone of Solidifying Alloys. Discussion of "Calculation Method of Equilibrium Composition in the Carbon—Hydrogen—Oxygen System and Its Application to Environments of a High-Temperature Gas Cooled Reactor"; Authors Reply.			
Computer simulation Simulating the Process of Carbon Anode Baking Used in the Aluminum Industry.			
Interlamellar Spacing in Directionally Solidified Eutectic Thin Films.			
Ostwald Ripening During Liquid Phase Sintering—Effect of Volume Fraction on Coarsening Kinetics.			
Concast See Continuous casting			
Concentration (composition) High-Temperature Phase Chemistry and Solidification Mode Prediction in Nitrogen-Strengthened Austenitic Stainless Steels.			
Concentration (stress) See Stress concentration			
Conducting See Conduction			
Conducting sheet analog See Heat transmission			
Conduction Comparison of Numerical Modeling Techniques for Complex, Two-Dimensional, Transient Heat-Conduction Problems.			
Consolidation Local Microstructural Modification in Dynamically Consolidated Metal Powders.			
Constitutional diagrams See Phase diagrams			
Consumption See Energy consumption			
Continuous annealing Temper-Aging of Continuously Annealed Low-Carbon Dual-Phase Steel.			
Effects of Prior Cold Rolling and Post-Temper Rolling on the Properties of Continuously Annealed Low-Carbon Dual-Phase Steel.			
Continuous cast shapes, Crystal growth Fluid Flow From a Low to a Higher Density Liquid.			
Continuous casting The Formation of Oscillation Marks in the Continuous Casting of Steel Slabs.			
Thermodynamics of Nozzle Blockage in Continuous Casting of Calcium-Containing Steels.			
Correction to Thermodynamics of Nozzle Blockage in Continuous Casting of Calcium-Containing Steels.			
Structural Effects and Band Segregate Formation During the Electromagnetic Stirring of Strand-Cast Steel.			
Strain Induced Cracking in Partially Solidified Tin—Lead Alloy.			
Controllability See Stability			
Controlled atmospheres See also Inert atmospheres			
Sintering Atmosphere Effects on the Ductility of W—Ni—Fe Heavy Metals.			
The Effect of Furnace Atmosphere Carbon Potential on the Development of Residual Stresses in 52100 Bearing Steel.			
Controlled rolling Grain Refinement of Niobium Steels by Control of Recrystallization During Hot Rolling.			
Convection Themosolutal Convection During Directional Solidification.			
Converters See Bottom blown converters			
Copper converters			
LD converters			
Cooling See Splat cooling			
Supercooling			
Cooling rate Toughness Variation With Test Temperature and Cooling Rate for Liquid Phase Sintered W—3.5Ni—1.5Fe.			
The Effect of Quench Rate on the Microstructure, Mechanical Properties and Corrosion Behavior of U—6 Wt.% Nb.			
Estimating Hardness Response of Hot Rolled Steel by Simulating Cooling Cycles Via Jominy Bar Testing.			

Cooling Rate Effects in Ti—6Al—2Sn—4Zr—2Mo Weldments	1948-1952A	Crack closure
A Two-Dimensional Transient Model for Convection in Laser Melted Pool.	2175-2184A	
Isothermal Martensitic Transformation in Fe—Ni and Fe—Ni—C Alloys at Subzero Temperatures.	2193-2203A	
Copper, Alloying elements		
An Electron Microscope Study of the Featureless Zone Obtained During Rapid Solidification.	29-31A	
Densification and Structural Development in Liquid Phase Sintering.	1065-1074A	
Pore Filling Process in Liquid Phase Sintering.	1075-1080A	
Copper, Binary systems		
Thermochemistry of Binary Liquid Gold Alloys: the Systems Gold—Copper and Gold—Silver at 1379K.	203-208A	
Calculations of Stable and Metastable Equilibrium Diagrams of the Ag—Cu and Cd—Zn Systems.	261-268A	
Thermodynamic Properties of the Iron—Copper System. I.—The Stable and Metastable Phase Equilibria.	1921-1930A	
Copper, Composite materials		
Effect of Tantalum Additions Upon <i>In Situ</i> Prepared Nb ₃ Sn—Cu Superconducting Wire.	283-286A	
Microstructural Changes Produced in a Multifilamentary Nb/Ti Composite by Cold Work and Heat Treatment.	843-852A	
Tensile Strength of Ni/Cu/(001)Ni Triple Layer Films.	1273-1280A	
Copper, Corrosion		
Stress-Corrosion Cracking of Copper Single Crystals.	1941-1946A	
Copper, Dopants		
Metastable Alloys of Beryllium Prepared by Ion Implantation.	1787-1805A	
Copper, Extraction		
A Mathematical Model for Calculation of Equilibrium Solution Speciations for the FeCl ₃ —FeCl ₂ —CuCl ₂ —CuCl—HCl—NaCl—H ₂ O System at 25°C.	213-219B	
High-Pressure Injection of Air Into a Peirce-Smith Copper Converter.	243-250B	
The Electrochemical Oxidation of Chalcocite in Ammoniacal Solutions.	289-297B	
Activity Coefficient of CuO _{0.5} in Alumina-Saturated Iron Silicate Slags.	345-349B	
Process R & D—the Noranda Process.	411-432B	
Distribution of Lead Between Copper and Matte and the Activity of PbS in Copper-Saturated Mattes.	441-449B	
Electrochemical Determination of Thiourea and Glue in the Industrial Copper Electrolyte.	451-459B	
Equilibrium Between Silica-Saturated Iron Silicate Slags and Molten Cu—As, Cu—Sb and Cu—Bi Alloys.	535-541B	
Activity of SnS in Copper-Saturated Matte.	595-598B	
The Nature and Source of Copper Smelter Particulate Emissions.	617-622B	
Copper, Oxidation		
The High-Temperature Oxidation of Metals Forming Cation-Diffusing Scales.	195B	
<i>In Situ</i> Observation of Copper Oxidation at High Temperatures.	573-586A	
A Collision Model for Fume Formation in Metal Oxidation.	587-593A	
The High-Temperature Oxidation of Metals Forming Cation-Diffusing Scales.	765-782A	
Copper, Reactions (chemical)		
A Contribution to the Thermodynamics of High-Temperature Digenite Cu _{2-x} S.	736-739B	
Copper, Refining		
Vacuum Refining Copper Melts to Remove Bismuth, Arsenic and Antimony.	251-257B	
Copper, Ternary systems		
Zero-Flux Planes and Flux Reversals in the Cu—Ni—Zn System at 775°C.	649-659A	
Copper, Thermal properties		
Thermochemistry of Alloys of Transition Metals. IV.—Alloys of Copper With Scandium, Yttrium, Lanthanum and Lutetium.	357-368B	
Copper base alloys		
See also Admiralty metal		
Aluminum brasses		
Brasses		
Copper base alloys, Crystal lattices		
Heating Rate Dependence of Disordering in Alpha-Cu—Al Alloys.	1999-2008A	
Copper base alloys, Diffusion		
An Analytical Electron Microscope Study of the Kinetics of the Equilibrium Segregation of Bismuth in Copper.	99-105A	
Surface Relief Produced by Diffusion-Induced Boundary Migration in Cu—Zn.	495-499A	
Copper base alloys, Directional solidification		
The Solidification of Monotectic Alloys—Microstructures and Phase Spacings.	1003-1012A	
Copper base alloys, Mechanical properties		
Effect of Cavitation on Post-Deformation Tensile Properties of a Superplastic Copper-Base Alloy.	1443-1450A	
The Mechanical Properties of Grain-Refined Beta-CuAlNi Strain-Memory Alloys.	1613-1621A	
Copper base alloys, Melting		
Distribution of Nickel Between Copper—Nickel and Alumina-Saturated Iron Silicate Slags.	33-37B	
Copper base alloys, Microstructure		
Modulated Microstructures in Copper—Zinc and Copper—Aluminum—Nickel.	269-276A	
A Review of the Data on the Interlamellar Spacing of Pearlite.	1019-1036A	
Copper base alloys, Phase transformations		
Stress-Induced Martensitic Transformation Cycling and Two-Way Shape Memory Training in Cu—Zn—Al Alloys.	313-321A	
Growth Kinetics and Mechanism of the Massive Transformation.	437-447A	
The Effect of Processing Conditions and Subsequent Heat Treatment on the Transformation Behavior of Some Rapidly Solidified Copper-Based Shape Memory Alloys.	471-480A	
Some Effects of Parent Phase Aging on the Martensitic Transformation in a Cu—Al—Ni Shape Memory Alloy.	621-626A	
Magnetization Measurement Associated With Gamma → Alpha Martensitic Transformation of Iron Particles in a Cu—1.5%Fe Alloy.	755-756A	
Copper base alloys, Phases (state of matter)		
The Gamma Phase Boundary of CuBe Alloys.	939-941A	
Identification of Cu ₂ Zr Phase in Cu—Zr Alloys.	1491-1493A	
Copper base alloys, Powder technology		
Ostwald Ripening During Liquid Phase Sintering—Effect of Volume Fraction on Coarsening Kinetics.	1081-1088A	
Copper base alloys, Structural hardening		
Age Hardening in Cu—2.5%Ti.	931-937A	
Copper converters		
Injection Phenomena in Nonferrous Processes.	77-89B	
High-Pressure Injection of Air Into a Peirce-Smith Copper Converter.	243-250B	
Copper converters, Design		
Process R & D—the Noranda Process.	411-432B	
Copper mattes		
Activity Coefficient of Oxygen in Copper—Sulfur Melts.	337-344B	
Copper mattes, Diffusion		
Activity of SnS in Copper-Saturated Matte.	595-598B	
Copper mattes, Sorption		
Distribution of Lead Between Copper and Matte and the Activity of PbS in Copper-Saturated Mattes.	441-449B	
Copper ores		
See Chalcocite		
Copper plating		
Enhanced Tensile Strength for Electrodeposited Nickel/Copper Multilayer Composites.	2039-2040A	
Core hardenability		
Core Hardenability Calculations for Carburizing Steels.	1173-1183A	
Core hardness		
See Hardness		
Corrosion		
See Corrosion fatigue		
Corrosion mechanisms		
Hot gas corrosion		
Scale (corrosion)		
Sulfurization		
Corrosion cracking		
See Stress corrosion cracking		
Corrosion effects		
See Scale (corrosion)		
Corrosion fatigue		
Near-Threshold Corrosion Fatigue Crack Growth Behavior of Type 422 Stainless Steel at Controlled Maximum Stress Intensities.	693-699A	
Effect of Oxidation Kinetics on the Near Threshold Fatigue Crack Growth Behavior of a Nickel-Based Superalloy.	1769-1775A	
Corrosion fatigue, Heating effects		
Discussion of "The Effect of Heat Treatments on the Corrosion Fatigue Properties of 13% Chromium Stainless Steel in 3% NaCl Aqueous Solution" (and Authors' Reply).	250-251A	
Corrosion mechanisms		
See also Scale (corrosion)		
<i>In Situ</i> Observation of Copper Oxidation at High Temperatures.	573-586A	
A Collision Model for Fume Formation in Metal Oxidation.	587-593A	
Corrosion products		
See Scale (corrosion)		
Corrosion rate		
Chlorination of Cobalt in an Argon—1% Oxygen—1% Chlorine Mixture at 1000K.	403-405A	
Corrosion rate, Composition effects		
The Effects of a Liquid Sulfate/Chloride Environment on Superalloy Stress Rupture Properties at 704°C.	23-28A	
Corrosion rate, Stress effects		
Behavior of Fe—Ni—Cr Alloys in a Complex Multioxidant Environment Under Conditions of Dynamic Straining.	11-22A	
Corrosion resistance, Cooling effects		
The Effect of Quench Rate on the Microstructure, Mechanical Properties and Corrosion Behavior of U—6 Wt.% Nb.	1319-1330A	
Crack closure		
Fatigue Threshold Studies in Iron, Fe—Si and HSLA Steel. I.—Effect of Strength and Surface Asperities on Closure.	875-888A	
Crack closure, Environmental effects		
Environmentally Influenced Mixed Mode Fatigue Crack Propagation of Titanium Metal/Matrix Composites.	209-215A	
Crack closure, Microstructural effects		
The Effect of Microstructure and Environment on Fatigue Crack Closure of 7475 Aluminum Alloy.	555-563A	

Crack growth

Crack growth	
See Crack propagation	
Crack propagation	
A Study of Creep Crack Growth in 2219-T851 Aluminum Alloy Using a Computerized Testing System. Envelopes of Crack-Like Surfaces for Modeling Cavity Growth.	107-120A
Fracture Behavior of W—Ni—Fe Heavy Alloys.	246-247A
Fatigue Crack Growth Behavior of an Oxide Dispersion-Strengthened MA 956 Alloy.	331-338A
Hydrogen-Induced Slow Crack Growth in Stable Austenitic Stainless Steels.	527-539A
Fatigue Threshold Studies in Iron, Fe—Si and HSLA Steel. II.—Thermally Activated Behavior of the Effective Stress Intensity at Threshold.	729-733A
Dependence of Dynamic Fracture Resistance on Crack Velocity in Tungsten. I.—Single Crystals.	889-900A
Dependence of Dynamic Fracture Resistance on Crack Velocity in Tungsten. II.—Bicrystals and Polycrystals.	1247-1251A
The Effect of One Slow—Fast Strain Cycle on the Fatigue Crack Growth Behavior of SUS 304 Stainless Steel at Elevated Temperature.	1253-1258A
Fatigue Crack Growth Mechanics for Ti—6Al—4V (RA) in Vacuum and Humid Air.	1731-1739A
See Creep strength	1931-1940A
Crack propagation, Alloying effects	
Fatigue in Binary Alloys of B—C—C. Iron.	679-691A
Crack propagation, Corrosion effects	
The Sulfidation Attack of a Nickel-Base Alloy at Intermediate Temperatures.	5-10A
Effect of Oxidation Kinetics on the Near Threshold Fatigue Crack Growth Behavior of a Nickel-Base Superalloy.	1769-1775A
Crack propagation, Diffusion effects	
Hydrogen-Induced Interior Crack-Tip Morphologies in High-Strength Steel.	1865-1871A
Crack propagation, Environmental effects	
Environmentally Influenced Mixed Mode Fatigue Crack Propagation of Titanium Metal Matrix Composites.	209-215A
Mechanisms of Slow Fatigue Crack Growth in High-Strength Aluminum Alloys: Role of Microstructure and Environment.	369-379A
Effect of Environment on Creep Crack Growth in PM/HIP René-95.	381-388A
Crack propagation, Heating effects	
Discussion of "The Effect of Heat Treatments on the Corrosion Fatigue Properties of 13% Chromium Stainless Steel in 3% NaCl Aqueous Solution" (and Authors' Reply).	250-251A
Crack propagation, Microstructural effects	
The Role of Alpha and Beta Phases in Fatigue Crack Propagation of Ti—Mn Alloys.	155-171A
Effect of Microstructure, Strength and Oxygen Content on Fatigue Crack Growth Rate of Ti—4.5Al—5.0Mo—1.5Cr (CORONA 5).	183-197A
Fatigue Crack Propagation in Dual-Phase Steels: Effects of Ferritic—Martensitic Microstructures on Crack Path Morphology.	1193-1207A
Influence of Texture on Fatigue Properties of Ti—6Al—4V.	1597-1605A
Crack propagation, Size effects	
The Influence of Crack Tip Plasticity in the Growth of Small Fatigue Cracks.	1579-1588A
Crack propagation, Stress effects	
The Effect of Overload on the Fatigue Crack Propagation in Metastable Beta Ti—V Alloys.	511-517A
Existence of the Coaxing Effect and Effects of Small Artificial Holes on Fatigue Strength of an Aluminum Alloy and 70-30 Brass.	2029-2038A
Crack propagation, Temperature effects	
Crack Growth in a Single-Crystal Superalloy at Elevated Temperature.	1711-1719A
Crack resistance	
See Crack propagation	
Cracking (fracturing)	
See also Stress corrosion cracking	
Stress cracking	
Strain Induced Cracking in Partially Solidified Tin—Lead Alloy.	739-741B
Prior Deformation Effects on Creep and Fracture in Inconel Alloy X-750.	1437-1441A
Cracking (fracturing), Microstructural effects	
The Influence of Hydrogen and the Interface Phase on Fracture in Ti Code 12.	1955-1958A
Creep (materials)	
See also Creep life	
Creep rate	
Creep recovery	
Creep rupture strength	
Creep strength	
Dislocation-Depth Distribution in High-Temperature Creep.	1571-1577A
Creep Transitions in an Al—Zn Alloy.	1893-1904A
Creep life	
Recovery of Creep Properties of a Vanadium-Strengthened Steel (1Cr1Mo0.75TiB) by Reheat Treatment.	707-718A
Creep life, Corrosion effects	
The Effects of a Liquid Sulfate/Chloride Environment on Superalloy Stress Rupture Properties at 704°C.	23-28A
Creep limit	
See Creep (materials)	
Creep properties	
See Creep (materials)	
Creep rate	
A Study of Creep Crack Growth in 2219-T851 Aluminum Alloy Using a Computerized Testing System.	107-120A
Creep rate, Composition effects	
Creep Rupture of Silicon Carbide Reinforced Aluminum Composite.	139-146A
Creep rate, Deformation effects	
Prior Deformation Effects on Creep and Fracture in Inconel Alloy X-750.	1437-1441A
Creep rate, Microstructural effects	
Structure and Properties of Rapidly Solidified Dispersion-Strengthened Titanium Alloys. II.—Tensile and Creep Properties.	1465-1474A
Creep recovery	
Dislocation-Depth Distribution in High-Temperature Creep.	1571-1577A
Creep recovery, Heating effects	
Recovery of Creep Properties of a Vanadium-Strengthened Steel (1Cr1Mo0.75TiB) by Reheat Treatment.	707-718A
Creep resistance	
See Creep strength	
Creep rupture strength	
Fatigue Crack Growth Behavior of an Oxide Dispersion-Strengthened MA 956 Alloy.	527-539A
Hydrogen-Induced Slow Crack Growth in Stable Austenitic Stainless Steels.	729-733A
Creep rupture strength, Coating effects	
The Effect of Protective Coatings on the High-Temperature Properties of Gamma Prime-Strengthened Nickel-Base Superalloy.	229-236A
Creep rupture strength, Corrosion effects	
The Sulfidation Attack of a Nickel-Base Alloy at Intermediate Temperatures.	5-10A
The Effects of a Liquid Sulfate/Chloride Environment on Superalloy Stress Rupture Properties at 704°C.	23-28A
Creep rupture strength, Deformation effects	
Prior Deformation Effects on Creep and Fracture in Inconel Alloy X-750.	1437-1441A
Creep rupture strength, Environmental effects	
Behavior of Fe—Ni—Cr Alloys in a Complex Multioxidant Environment Under Conditions of Dynamic Straining.	11-22A
Effect of Environment on Creep Crack Growth in PM/HIP René-95.	381-388A
Creep strength, Composition effects	
Creep Rupture of a Silicon Carbide Reinforced Aluminum Composite.	139-146A
Creep strength, Environmental effects	
Tensile Behavior of Inconel Alloy X-750 in Air and Vacuum at Elevated Temperatures.	1763-1767A
Creeping	
See Creep (materials)	
Critical current (superconductivity), Alloying effects	
Effect of Tantalum Additions Upon <i>In Situ</i> Prepared Nb ₃ Sn—Cu Superconducting Wire.	283-286A
Critical field (superconductivity), Alloying effects	
Effect of Tantalum Additions Upon <i>In Situ</i> Prepared Nb ₃ Sn—Cu Superconducting Wire.	283-286A
Critical temperature	
The Effect of Processing Conditions and Subsequent Heat Treatment on the Transformation Behavior of Some Rapidly Solidified Copper-Based Shape Memory Alloys.	471-480A
Cross tension test	
See Tension tests	
Crushing strength	
See Compressive strength	
Cryogenic temperature	
See Cryogenics	
Cryogenics	
The Role of the Constituent Phases in Determining the Low Temperature Toughness of 5.5Ni Cryogenic Steel.	2213-2219A
Cryolite, Reactions (chemical)	
The Determination of the Thermodynamics of the NaF—AlF ₃ —Al ₂ O ₃ System With a Solid Electrolyte Cell.	135-139B
Cryolite, Solubility	
Interactions of Gases in Molten Salts: Carbon Dioxide and Oxygen in Cryolite Alumina Melts.	39-46B
Crystal defects	
See also Dislocations	
Edge dislocations	
Screw dislocations	
Structure of Interphase Boundaries in a Eutectic Co—Al Alloy.	1623-1626A
Crystal growth	
Distinguishing Features of Massive Transformations.	421-425A
Convection-Induced Distortion of a Solid/Liquid Interface.	2109-2115A
Morphological Stability in the Presence of Fluid Flow in the Melt.	2117-2124A
Thermosolutal Convection During Directional Solidification.	2125-2137A
Studies of Directionally Solidified Eutectic Bi/MnBi at Low Growth Velocities.	2139-2145A
Thermoelectric and Morphological Effects of Peltier Pulsing on Directional Solidification of Eutectic Bi/Mn.	2147-2154A
A Two-Dimensional Transient Model for Convection in Laser Melted Pool.	2175-2184A

Crystal growth, Diffusion effects		
Growth Kinetics and Mechanism of the Massive Transformation.	437-447A	
Crystal growth, Field effects		
Effect of Applied Magnetic Fields During Directional Solidification of Eutectic Bi/Mn.	2155-2161A	
Crystal lattices		
See Superlattices		
Crystal orientation		
See Crystal structure		
Crystal structure		
See also Substructures (crystalline)		
The Nucleation Kinetics, Crystallography and Mechanism of the Massive Transformation.	427-435A	
Rapid Solidification of a Droplet-Processed Stainless Steel.	819-833A	
Formation of Metal Carbide Powder by Spark Machining of Reactive Metals.	1117-1127A	
Use of Reciprocal Lattice Layer Spacing in Convergent Beam Electron Diffraction Analysis.	1299-1302A	
Crystallinity		
See Crystal structure		
Crystallization		
See also Recrystallization		
Numerical Treatment of Rapid Solidification.	369-381B	
Crystallization Studies in the Aluminum-Rich Corner of the Aluminum-Iron-Manganese System.	1311-1317A	
Crystallography		
On the Substructure of Athermal and Isothermal Martensites Formed in an Fe-21Ni-4Mn Alloy.	1555-1562A	
Crystals		
See Bicrystals		
Polycrystals		
Single crystals		
Whiskers (metals)		
Currents		
See Critical current (superconductivity)		
Curves		
See Stress strain curves		
Cutting		
See Electric discharge machining		
Cutting tools		
See Hack saws		
High speed steel tools		
Czochralski process		
See Crystal growth		
Decarburizing		
The Interfacial Kinetics of the Reaction of CO ₂ With Liquid Nickel.	655-661B	
Decomposition		
See Phase decomposition		
Deep carburizing		
See Carburizing		
Defects		
See Casting defects		
Crystal defects		
Dislocations		
Edge dislocations		
Screw dislocations		
Surface defects		
Deformability		
See Formability		
Dendrite		
See Dendritic structure		
Dendritic structure		
Fluid Flow From a Low to a Higher Density Liquid.	681-684B	
Pattern Selection in Solidification.	961-966A	
Interdendritic Spacing. I.—Experimental Studies.	967-975A	
Interdendritic Spacing. II.—A Comparison of Theory and Experiment.	977-982A	
A Numerical Finite Difference Model of Steady State Cellular and Dendritic Growth.	983-994A	
Ostwald Ripening and Relaxation in Dendritic Structures.	995-1001A	
Solidification of Highly Undercooled Sn—Pb Alloy Droplets.	1303-1310A	
Primary Dendrite Spacing. II.—Experimental Studies of Pb—Pd and Pb—Au Alloys.	1665-1676A	
Effects of Gravity on Interdendritic Flow: an Analytical Approach.	2095-2097A	
The Mechanisms of Formation and Prevention of Channel Segregation During Alloy Solidification.	2163-2173A	
Densification		
Densification and Structural Development in Liquid Phase Sintering.	1065-1074A	
Densification, Environmental effects		
Sintering Atmosphere Effects on the Ductility of W—Ni—Fe Heavy Metals.	747-754A	
Dephosphorizing		
Thermodynamics of Phosphate and Phosphide in CaO—CaF ₂ Melts.	351-356B	
Deposition		
See Copper plating		
Duplex plating		
Nickel plating		
Descaling		
Control of Autoclave Scaling During Acid Pressure Leaching of Nickeliferous Laterite Ore.	433-440B	
Desulfurizing		
A Contribution to the Thermodynamics of High-Temperature Digenite Cu _{2-y} S.	736-739B	
Diagrams		
See Phase diagrams		
S N diagrams		
Dielectric properties		
See Dielectrics		
Dielectrics, Reactions (chemical)		
Formation of Metal Carbide Powder by Spark Machining of Reactive Metals.	1117-1127A	
Diffraction		
See also Diffraction patterns		
Electron diffraction		
Modulated Microstructures in Copper—Zinc and Copper—Aluminum—Nickel.	269-276A	
Diffraction patterns		
"Premarktene" Phase in Nickel—Aluminum Thin Foils.	1353-1357A	
Diffractometry		
See Diffraction		
Diffusion		
Distinguishing Features of Massive Transformations.	421-425A	
Kinetics of Methane Bubble Growth in a 1020 Steel.	487-494A	
The Effect of Pressure Modulation on the Flow of Gas Through a Solid Membrane: Permeation and Diffusion of Hydrogen Through Nickel.	639-648A	
Zero-Flux Planes and Flux Reversals in the Cu—Ni—Zn System at 75°C.	649-659A	
Forced Velocity Pearlite in High-Purity Fe—C Alloys. II.—Theoretical.	1047-1054A	
Ternary Diffusion. Solutions With Diffusion Coefficients Linearly Dependent on Concentrations.	1359-1366A	
Diffusion coatings		
The Effect of Protective Coatings on the High-Temperature Properties of a Gamma Prime-Strengthened Nickel-Base Superalloy.	229-236A	
Diffusion coefficient		
See Diffusion		
Diffusion couples		
See Diffusion		
Diffusion rate		
Segregation of Manganese During Intercritical Annealing of Dual-Phase Steels.	1499-1502A	
Diffusivity		
Discussion of "Self-Diffusion Coefficients of Carbon in Fe,C at 723K Via the Kinetics of Formation of This Compound (and Authors' Reply).	245-246A	
Oxygen Solubility in Liquid Indium and Oxygen Diffusivity in Liquid Indium and Tin.	329-335B	
Thermodynamics of the Massive Transformation.	411-419A	
Surface Relief Produced by Diffusion-Induced Boundary Migration in Cu—Zn.	495-499A	
The Room-Temperature Effective Diffusivity of Hydrogen in Vapor-Deposited Aluminum.	1953-1955A	
Diffusivity, Coating effects		
Prevention of Hydrogen Embrittlement by a TiO ₂ Surface Layer.	597-600A	
Diffusivity, Environmental effects		
Isotope Exchange Studies of the Rate of Dissociation of CO ₂ on Liquid Iron Oxides and CaO-Saturated Calcium Ferrites.	563-571B	
Dimensions		
See Particle size		
Thickness		
Dioxides		
See Carbon dioxide		
Silicon dioxide		
Titanium dioxide		
Dip coatings		
See Hot dip coatings		
Direct reduction		
See also Hydrogen reduction		
Cell Measurements of the Reduction Potentials of Gas-Phase Emanating From PbS/CaO/C at Elevated Temperatures.	19-22B	
The Breakdown of Dense Iron Layers on Wustite in CO/CO ₂ and H ₂ /H ₂ O Systems.	701-708B	
Establishment of Product Morphology During the Initial Stages of Wustite Reduction.	709-717B	
Directional solidification		
Pattern Selection in Solidification.	961-966A	
Interdendritic Spacing. I.—Experimental Studies.	967-975A	
Interdendritic Spacing. II.—A Comparison of Theory and Experiment.	977-982A	
Primary Dendrite Spacing. II.—Experimental Studies of Pb—Pd and Pb—Au Alloys.	1665-1676A	
Thermosolutal Convection During Directional Solidification.	2125-2137A	
Studies of Directionally Solidified Eutectic Bi/MnBi at Low Growth Velocities.	2139-2145A	
Thermoelectric and Morphological Effects of Peltier Pulsing on Directional Solidification of Eutectic Bi/Mn.	2147-2154A	
Directional solidification, Field effects		
Effect of Applied Magnetic Fields During Directional Solidification of Eutectic Bi/Mn.	2155-2161A	

Directionally solidified eutectics

Directionally solidified eutectics	
Interlamellar Spacing in Directionally Solidified Eutectic Thin Films.	1013-1017A
Directionally solidified eutectics, Crystal growth	
The Breakdown of Fibrous Structures in Directionally Grown Monotectic Alloys.	1626-1631A
Directionally solidified eutectics, Mechanical properties	
Deformation and Fracture Behavior of Ni-Mo/Al (Gamma/Gamma Prime-Alpha) <i>In Situ</i> Composite.	1905-1919A
Directionally solidified eutectics, Microstructure	
The Effect of Fluid Flow on the Eutectic Lamellar Spacing.	307-312A
The Solidification of Monotectic Alloys—Microstructures and Phase Spacings.	1003-1012A
Structure of Interphase Boundaries in a Eutectic Co-Al Alloy.	1623-1626A
Discontinuous precipitates	
See Cellular precipitates	
Dislocation density	
Consequences of the Heterogeneous Nitriding of Alpha-Iron: Dislocation Production and Oriented Precipitation.	627-637A
Dislocation-Depth Distribution in High-Temperature Creep.	1571-1577A
Dislocation density, Deformation effects	
Crystallographic and Morphological Characteristics of Oxidation Growth Pits in Wustite Grown at 1200°C.	2241-2246A
Dislocation density, Stress effects	
Dislocation Substructure as a Function of Strain in a Dual-Phase Steel.	1221-1228A
Dislocations	
See also Edge dislocations	
Screw dislocations	
Tensile Strength of Ni-Cu-(001)Ni Triple Layer Films.	1273-1280A
Dislocations, Deformation effects	
The Structure of Extruded NiAl.	1129-1136A
Dispersion hardening	
Rapid Solidification Processing of Magnesium-Lithium Alloys.	237-240A
Dispersion hardening, Heating effects	
Structure and Properties of Rapidly Solidified Dispersion-Strengthened Titanium Alloys. I.—Characterization of Dispersion Distribution, Structure and Chemistry.	1451-1463A
Dispersion hardening alloys, Mechanical properties	
Fatigue Crack Growth Behavior of an Oxide Dispersion-Strengthened MA 956 Alloy.	527-539A
Structure and Properties of Rapidly Solidified Dispersion-Strengthened Titanium Alloys. II.—Tensile and Creep Properties.	1465-1474A
Elevated-Temperature Compressive Steady State Deformation and Failure in the Oxide Dispersion Strengthened Alloy MA 6000E.	1753-1762A
Dissociation energy	
See Free energy of formation	
Dissolution	
See also Anodic dissolution	
The Dissolution of Titanium in Liquid Steel.	47-58B
Shape Changes During Dissolution of Theta Prime-CuAl ₁₃ .	449-458A
Metastable Phases in the Early Stage of Precipitation in Al-Mg Alloys.	835-842A
Dissolution Kinetics of Widmanstätten Gamma-Ag ₃ Al Precipitates.	1969-1975A
Dissolving	
See Dissolution	
Doebler double plating	
See Duplex plating	
Domains	
Some Effects of Parent Phase Aging on the Martensitic Transformation in a Cu-Al-Ni Shape Memory Alloy.	621-626A
Drawing (heat treatment)	
See Tempering	
Drill steels	
See Tool steels	
Dual nickel plating	
See Duplex plating	
Dual phase steels, Diffusion	
Segregation of Manganese During Intercritical Annealing of Dual-Phase Steels.	1499-1502A
Dual phase steels, Heat treatment	
Temper-Aging of Continuously Annealed Low-Carbon Dual-Phase Steel.	73-86A
Dual phase steels, Mechanical properties	
Effects of Prior Cold Rolling and Post-Temper Rolling on the Properties of Continuously Annealed Low-Carbon Dual-Phase Steel.	671-678A
Fatigue Crack Propagation in Dual-Phase Steels: Effects of Ferritic-Martensitic Microstructures on Crack Path Morphology.	1193-1207A
Dual phase steels, Microstructure	
Dislocation Substructure as a Function of Strain in a Dual-Phase Steel.	1221-1228A
Dual phase steels, Rolling	
Grain Refinement of Niobium Steels by Control of Recrystallization During Hot Rolling.	87-98A
Ductile brittle transition, Cooling effects	
Toughness Variation With Test Temperature and Cooling Rate for Liquid Phase Sintered W-3.5Ni-1.5Fe.	121-128A
Ductile brittle transition, Heating effects	
The Role of the Constituent Phases in Determining the Low-Temperature Toughness of 5.5Ni Cryogenic Steel.	2213-2219A
Ductile iron	
See Nodular iron	
Ductility	
Fracture Behavior of W-Ni-Fe Heavy Alloys.	331-338A
The Fracture of Ordered (Fe, Co), V.	701-706A
Hot Workability of Three Grades of Tool Steels.	1855-1864A
Ductility, Alloying effects	
Effects of Hydrogen on Mechanical Properties of Vanadium-Niobium Alloys.	147-153A
Improved Strength and Ductility in Ni ₃ Al by Boron Modification and Rapid Solidification.	399-402A
Ductility, Anisotropy	
Effect of Shape of Sulfide Inclusions on Anisotropy of Inclusion Spacings and on Directionality of Ductility in Hot Rolled C-Mn Steels.	1259-1264A
Ductility, Coating effects	
The Effect of Protective Coatings on the High-Temperature Properties of a Gamma Prime-Strengthened Nickel-Base Superalloy.	229-236A
Ductility, Heating effects	
Low-Temperature Improvement of the Mechanical Properties of 4340-Type Ultra-High-Strength Steel With Heat Treating Techniques Using Interrupted Quenching Method.	2247-2249A
Ductility, High temperature effects	
Tensile Failure Behavior of Plain Carbon Steels at Elevated Temperatures.	2059-2073A
Ductility, Microstructural effects	
The Effect of Microstructure on the Deformation Modes and Mechanical Properties of Ti-6Al-2Nb-1Ta-0.8Mo. I.—Widmanstätten Structures.	1229-1245A
The Effect of Microstructure and Deformation Behavior on the Hot Ductility of Ti-6Al-2Nb-1Ta-0.8Mo.	1687-1698A
Duomelt process	
See Vacuum arc melting	
Duplex chromium plating	
See Duplex plating	
Duplex nickel plating	
See Duplex plating	
Duplex plating	
Enhanced Tensile Strength for Electrodeposited Nickel/Copper Multilayer Composites.	2039-2040A
Dur Ni process	
See Duplex plating	
Dust	
See Smelter dust	
Dynamics	
See Fluid dynamics	
Kinetics	
Edge dislocations	
High-Temperature Oxidation of Iron at 1200°C in a Hot Stage Environmental Scanning Electron Microscope.	2231-2240A
Elastic constants	
See Modulus of elasticity	
Elastic modulus	
See Modulus of elasticity	
Electric arc melting	
See Vacuum arc melting	
Electric conductors (materials)	
See Electrolytes	
Electric discharge machining	
Formation of Metal Carbide Powder by Spark Machining of Reactive Metals.	1117-1127A
Electric spark machining	
See Electric discharge machining	
Electric welding	
See Electron beam welding	
Electroslag welding	
Gas tungsten arc welding	
Submerged arc welding	
Electrical conductance	
See Electrical resistance	
Electrical impedance	
See Electrical resistance	
Electrical properties	
See Thermoelectricity	
Electrical resistance, Temperature effects	
Electron Microscopy Studies of Charge Density Wave (CDW) Transitions in a Ti ₅₈ -Ni _{37.5} Al _{3.8} Alloy.	1155-1163A
Electrical steels, Microstructure	
A Review of the Data on the Interlamellar Spacing of Pearlite.	1019-1036A
Electrocoatings	
See Electroplates	
Electrodeposition	
See Duplex plating	

Electrodes See Anodes Cathodes Fluidized bed cathodes	Heat of formation Heat of mixing Heat of solution Surface energy
Electroerosion (machining) See Electric discharge machining	
Electrolysis See Electrowinning	
Electrolytes, Chemical analysis Electrochemical Determination of Thiourea and Glue in the Industrial Copper Electrolyte.	451-459B
Electrolytic cells Reactions in Hall Smelting Cell Potlining.	277-280B
Electrolytic dissolution See Anodic dissolution	
Electromagnetic stirring The Effect of Fluid Flow on the Eutectic Lamellar Spacing. Steady Low of Liquid Aluminum in a Rectangular-Vertical Ingot Mold, Thermally or Electromagnetically Activated. Structural Effects and Band Segregate Formation During the Electromagnetic Stirring of Strand-Cast Steel. Fluid Flow and Mass Transfer in an Inductively Stirred Four-Ton Melt of Molten Steel: a Comparison of Measurements and Predictions.	307-312A 471-478B 581-589B 633-640B
Electron beam melting The Effect of Rapid Solidification Velocity on the Microstructure of Ag—Cu Alloys	55-66A
Electron beam vacuum melting See Electron beam melting	
Electron beam welding A New Finite Element Model for Welding Heat Sources. Metal Vaporization From Weld Pools.	299-305B 461-469B
Electron diffraction Use of Reciprocal Lattice Layer Spacing in Convergent Beam Electron Diffraction Analysis. "Premartensitic" Phase in Nickel—Aluminum Thin Foils.	1299-1302A 1353-1357A
Electron microscopy See also Scanning electron microscopy An Analytical Electron Microscope Study of the Kinetics of the Equilibrium Segregation of Bismuth in Copper.	99-105A
Electroplates, Mechanical properties Enhanced Tensile Strength for Electrodeposited Nickel/Copper Multilayer Composites.	2039-2040A
Electroplating See Duplex plating	
Electroreduction See Electrowinning	
Electrorefining See Electroslag refining	
Electroslag process See Electroslag refining	
Electroslag refining Charge Transfer at Fe/FeO(CaF ₂) Electrodes at 1450°C. Exchange Current Density, Electrode Capacitance, Diffusivity.	281-288B
Electroslag welding The Role of Alloy Composition on the Stability of Nitrides in Titanium-Microalloyed Steels During Weld Thermal Cycles.	33-41A
Electrowinning Electrochemical Determination of Thiourea and Glue in the Industrial Copper Electrolyte. Electrodeposition of Lead Sulfide in Different Acidic Media. Fluidized-Bed Electrodeposition of Zinc.	451-459B 605-608B 623-631B
Elongation Tensile Properties of a 2014 Aluminum Alloy in the Temperature Range 250 to 500°C.	913-922A
Embrittlement See also Hydrogen embrittlement Interphase Boundary Precipitation in Liquid Phase Sintered W—Ni—Fe and W—Ni—Cu Alloys.	1089-1098A
Embrittlement, Alloying effects The Influence of Alloying Elements on Impurity-Induced Grain Boundary Embrittlement.	1415-1430A
Embrittlement, Cooling effects Toughness Variation With Test Temperature and Cooling Rate for Liquid Phase Sintered W—3.5Ni—1.5Fe.	121-128A
Embrittlement, High temperature effects Tensile Failure Behavior of Plain Carbon Steels at Elevated Temperatures.	2059-2073A
Emission See Acoustic emission	
End quenching See Jominy test	
Endurance (testing) See Fatigue tests	
Endurance limit See Fatigue limit	
Energy See Activation energy Free energy Free energy of formation	
Energy conservation Exergy Analysis of a Chemical Metallurgical Process.	645-654B
Energy consumption Exergy Analysis of a Chemical Metallurgical Process.	645-654B
Energy of activation See Activation energy	
Energy of dissociation See Free energy of formation	
Energy of formation See Free energy of formation	
Energy of fracture See Toughness	
Environment See Space environment	
Equilibrium See Chemical equilibrium	
Equilibrium constants See Chemical equilibrium	
Equilibrium diagrams See Phase diagrams	
Erosion resistance, Heating effects Laser Processing of Cast Iron for Enhanced Erosion Resistance.	719-728A
Etching See Chemical etching	
Eutectic composition Microstructure of One of the Ternary Eutectic Alloys in the Bi—In—Sn System.	1515-1517A
Eutectics See also Directionally solidified eutectics	
Eutectics, Crystal growth Modification in the Aluminum—Silicon System.	459-469A
Eutectoid reactions A Review of the Data on the Interlamellar Spacing of Pearlite. Further Considerations on the Thermodynamics of the Proeutectoid Ferrite Reaction in Fe—C Alloys.	1019-1036A 1287-1288A
Exhaust gases See Flue gases	
Expansion See Thermal expansion	
Extractive metallurgy See Hydrometallurgy	
Extrusion compacting See Compacting	
Extrusions, Microstructure The Structure of Extruded NiAl.	1129-1136A
Fatigue (materials) See also Corrosion fatigue Fatigue life Fatigue limit Fatigue strength Low cycle fatigue Fatigue Crack Growth Behavior of an Oxide Dispersion-Strengthened MA 956 Alloy.	527-539A
The Effect of Microstructure and Environment on Fatigue Crack Closure of 7475 Aluminum Alloy.	555-563A
Fatigue Threshold Studies in Iron, Fe—Si and HSLA Steel. II.—Thermally Activated Behavior of the Effective Stress Intensity at Threshold.	889-900A
Fatigue (materials), Alloying effects The Effect of Minor Alloying Elements on the Mechanical Properties of Al—Cu—Li Alloys.	1209-1220A
Fatigue (materials), Microstructural effects Fatigue Crack Propagation in Dual-Phase Steels: Effects of Ferrite—Martensite Microstructures on Crack Path Morphology.	1193-1207A
Fatigue Behavior of Carburized Steel With Internal Oxides and Nonmartensitic Microstructure Near the Surface.	1431-1436A
Fatigue (materials), Stress effects The Effect of Overload on the Fatigue Crack Propagation in Metastable Beta Ti—V Alloys.	511-517A
Fatigue (materials), Temperature effects Fatigue Threshold Studies in Iron, Fe—Si and HSLA Steel. I.—Effect of Strength and Surface Asperities on Closure.	875-888A
Fatigue cracking See Fatigue failure	
Fatigue failure, Corrosion effects The Sulidation Attack of a Nickel-Base Alloy at Intermediate Temperatures.	5-10A
Fatigue failure, Microstructural effects Effect of Microstructure, Strength and Oxygen Content on Fatigue Crack Growth Rate of Ti—4.5Al—5.0Mo—1.5Cr (CORONA 5). Mechanisms of Slow Fatigue Crack Growth in High-Strength Aluminum Alloys: Role of Microstructure and Environment.	183-197A 369-379A

Fatigue failure

Fatigue failure, Temperature effects

Crack Growth in a Single-Crystal Superalloy at Elevated Temperature.
1711-1719A

Deformation in Ti₃Al Fatigued at Room and Elevated Temperatures.
1721-1729A

Fatigue fracture

See Fatigue failure

Fatigue life

The High-Temperature Low-Cycle Fatigue Behavior of the Nickel-Base Alloy IN-617.
661-670A

The Effect of One Slow-Fast Strain Cycle on the Fatigue Crack Growth Behavior of SUS 304 Stainless Steel at Elevated Temperature.
1731-1739A

Fatigue life, Alloying effects

Fatigue in Binary Alloys of B.C.C. Iron.
679-691A

Fatigue life, Temperature effects

Deformation in Ti₃Al Fatigued at Room and Elevated Temperatures.
1721-1729A

Fatigue limit, Stress effects

Existence of the Coaxing Effect and Effects of Small Artificial Holes on Fatigue Strength of an Aluminum Alloy and 70-30 Brass.
2029-2038A

Fatigue properties

See Fatigue (materials)

Fatigue strength, Heating effects

Discussion of "The Effect of Heat Treatments on the Corrosion Fatigue Properties of 13% Chromium Stainless Steel in 3% NaCl Aqueous Solution" (and Authors' Reply).
250-251A

Fatigue strength, Microstructural effects

Tensile and Fatigue Behavior of Aluminum Oxide Fiber-Reinforced Magnesium Composites. I.—Fiber Fraction and Orientation.
1389-1396A

Influence of Texture on Fatigue Properties of Ti—Al—IV.
1597-1605A

Fatigue strength, Stress effects

Existence of the Coaxing Effect and Effects of Small Artificial Holes on Fatigue Strength of an Aluminum Alloy and 70-30 Brass.
2029-2038A

Fatigue tests

Effects of Fatigue on the G—P Zones in Al—Zn Alloys.
1519-1529A

Ferric compounds

See Iron compounds

Ferrite, Crystal growth

Nucleation of Intragranular Ferrite in Fe—Ni—P Alloys.
861-865A

Growth of Intragranular Ferrite in Fe—Ni—P Alloys.
867-874A

Ferrite, Solubility

Solubility of Niobium Carbide and Niobium Carbonitride in Alloyed Austenite and Ferrite.
545-553A

Ferrites, Reduction (chemical)

Kinetics of Leaching of Zinc Ferrite in Aqueous Hydrochloric Acid Solutions.
221-228B

Whisker Growth in Reduction of Oxides.
685-694B

Ferritic stainless steels, Diffusion

The Effect of a Tin Barrier on the Permeability of Hydrogen Through Mild Steel and Ferritic Stainless Steel.
2093-2095A

Ferrous alloys

See also Steels

Ferrous alloys, Casting

Ribbon—Substrate Adhesion Dynamics in Chill Block Melt-Spinning Processes.
155-161B

Ferrous alloys, Diffusion

Measurement and Analysis of Distribution Coefficients in Fe—Ni Alloys Containing Sulfur and/or Phosphorus. I.—K_{Ni} and K_P.
1677-1685A

Ferrous alloys, Directional solidification

Forced Velocity Pearlite in High-Purity Fe—C Alloys. I.—Experimental.
1037-1045A

Forced Velocity Pearlite in High-Purity Fe—C Alloys. II.—Theoretical.
1047-1054A

Ferrous alloys, Heat treatment

Resistometric Study of Fe—V and Fe—Mo Nitrided by Constant Activity Aging.
1545-1554A

Ferrous alloys, Mechanical properties

The Sulfdation Attack of a Nickel-Base Alloy at Intermediate Temperatures.
5-10A

Behavior of Fe—Ni—Cr Alloys in a Complex Multioxidant Environment Under Conditions of Dynamic Straining.
11-22A

Fatigue Crack Growth Behavior of an Oxide Dispersion-Strengthened MA 950 Alloy.
527-539A

Fatigue in Binary Alloys of B.C.C. Iron.
679-691A

Fatigue Threshold Studies in Iron, Fe—Si and HSLA Steel. I.—Effect of Strength and Surface Asperities on Closure.
875-888A

Fatigue Threshold Studies in Iron, Fe—Si and HSLA Steel. II.—Thermally Activated Behavior of the Effective Stress Intensity at Threshold.
889-900A

The Influence of Alloying Elements on Impurity-Induced Grain Boundary Embrittlement.
1415-1430A

Tensile Failure Behavior of Plain Carbon Steels at Elevated Temperatures.
2059-2073A

Ferrous alloys, Microstructure

Sip Directions in B2 Fe—Al Alloys.
395-399A

A Review of the Interlamellar Spacing of Pearlite.
1019-1036A

Ferrous alloys, Phase transformations

Thermodynamics of the Massive Transformation.
411-419A

The Nucleation Kinetics, Crystallography and Mechanism of the Massive Transformation

427-435A

Further Considerations on the Thermodynamics of the Proeutectoid Ferrite Reaction in Fe—C Alloys.

1287-1288A

Isothermal Martensitic Transformation in Fe—Ni and Fe—Ni—C Alloys at Subzero Temperatures.

2193-2203A

Ferrous alloys, Phases (state of matter)

Nucleation of Intragranular Ferrite in Fe—Ni—P Alloys.
861-865A

Growth of Intragranular Ferrite in Fe—Ni—P Alloys.
867-874A

On the Substructure of Athermal and Isothermal Martensites Formed in an Fe—21Ni—4Mn Alloy.
1555-1562A

Ferrous alloys, Powder technology

Densification and Structural Development in Liquid Phase Sintering.
1065-1074A

Pore Filling Process in Liquid Phase Sintering.
1075-1080A

Ostwald Ripening During Liquid Phase Sintering—Effect of Volume Fraction on Coarsening Kinetics.
1081-1088A

Ferrous alloys, Solubility

Solubility Product for Niobium Carbide in Austenite.
541-544A

Ferrous alloys, Structural hardening

Kinetics of Aging in an Fe—12Ni—6Mn Maraging Alloy.
1947-1948A

Ferrous alloys, Thermal properties

On the Relationship Between Interaction Coefficients.
677-680B

Ferrous compounds

See Iron compounds

Ferrous metals

See Ferrous alloys

Fiber composites, Forging

The Fracture Behavior of Tungsten Wire-Reinforced Superalloy Composites During Isothermal Forging.
501-510A

Fiber composites, Mechanical properties

Environmentally Influenced Mixed Mode Fatigue Crack Propagation of Titanium Metal / Matrix Composites.
209-215A

Critical Stress Intensity for Off-Axis Fracture of Al₂O₃ Fiber-Reinforced Magnesium.
756-760A

Fiber composites, Microstructure

Microstructural Changes Produced in a Multifilamentary Nb/Ti Composite by Cold Work and Heat Treatment.
843-852A

Fiber metallurgy

See Fiber composites

Fibers

See Whiskers (metals)

Fibrous structure

The Solidification of Monotectic Alloys—Microstructures and Phase Spacings.
1003-1012A

Fields (physics)

See Critical field (superconductivity)
Magnetic fields

Filler metal

Structure of Vacuum Brazed BN-5 Joint of Inconel 718.
609-620A

Films

See Thin films

Finishing

See Surface finishing

Finite element method

A Numerical Finite Difference Model of Steady State Cellular and Dendritic Growth.
983-994A

Finsider process

See Direct reduction

Flame descaling

See Descaling

Flame reduction process

See Direct reduction

Flexural vibration

See Fatigue (materials)

Flow

See Fluid flow
Gas flow
Mass flow
Plastic flow

Flow stress

See Yield strength

Flue gases

A Contribution to the Thermodynamics of High-Temperature Digeneite Cu₂—S.
736-739B

Fluid dynamics

The Movement of Particles in Liquid Metals Due to Gravity.
479-485B

Fluid flow

See also Gas flow
Heat Transfer and Fluid Flow in Plasma Spraying.
59-70B

The Effect of Fluid Flow on the Eutectic Lamellar Spacing.
307-312A

Steady Low of Liquid Aluminum in a Rectangular-Vertical Ingot Mold, Thermally or Electromagnetically Activated.
471-478B

Fluid Flow and Mass Transfer in an Inductively Stirred Four-Ton Melt of Molten Steel: A Comparison of Measurements and Predictions.
633-640B

Fluid Flow From a Low to a Higher Density Liquid.
681-684B

Gas permeability

Velocity Measurement in Wood's Metal Using an Incorporated Magnet Probe.	734-736B	Fracture toughness	The Effect of Microstructure on the Deformation Modes and Mechanical Properties of Ti—6Al—2Nb—1Ta—0.8Mo. I.—Widmanstätten Structures.	1229-1245A
Convection-Induced Distortion of a Solid/Liquid Interface.	2109-2115A		Dependence of Dynamic Fracture Resistance on Crack Velocity in Tungsten. I.—Single Crystals.	1247-1251A
Morphological Stability in the Presence of Fluid Flow in the Melt.	2117-2124A		Dependence of Dynamic Fracture Resistance on Crack Velocity in Tungsten. II.—Bicrystals and Polycrystals.	1253-1258A
Thermosolutal Convection During Directional Solidification.	2125-2137A	Fracture toughness, Alloying effects	The Effect of Minor Alloying Elements on the Mechanical Properties of Al—Cu—Li Alloys.	1209-1220A
A Two-Dimensional Transient Model for Convection in Laser Melted Pool.	2175-2184A	Fracture toughness, Heating effects	Effect of Tempering on Quasistatic and Impact Fracture Toughness and Mechanical Properties for 5140 H Steel.	901-911A
Fluid mechanics		Fracture toughness, Microstructural effects	Effect of Microstructure, Strength and Oxygen Content on Fatigue Crack Growth Rate of Ti—4.5Al—5.0Mo—1.5Cr (CORONA 5).	183-197A
See Fluid dynamics			The Influence of Microstructure on Brittle Fracture Toughness.	947-959A
Fluidized bed cathodes			The Effect of Microstructure on the Deformation Modes and Mechanical Properties of Ti—6Al—2Nb—0.8Mo. II.—Equiaxed Structures.	1873-1881A
Fluidized-Bed Electrodeposition of Zinc.	623-631B	Fracturing	See also Brittle fracture	
Fluidized bed electrodes			Intergranular fracture	
See Fluidized bed cathodes			Fracture Behavior of W—Ni—Fe Heavy Alloys.	331-338A
Fluxes			Direct Measurement of the Work of Fracture for Grain Boundaries of Twist Misorientation About (100) in Tungsten.	1289-1292A
Influence of MgO Addition on Mineralogy of Iron Ore Sinter.	23-34B	Fracturing, Microstructural effects	See Directions in B2 Fe—Al Alloys.	395-399A
Fluxes, Reactions (chemical)			See also Activation energy	
Slag Metal Reactions During Submerged Arc Welding of Alloy Steels.	217-227A	Free energy	Free energy of formation	
Foil (metal), Phases (state of matter)			Growth Kinetics and Mechanism of the Massive Transformation.	437-447A
"Premartensitic" Phase in Nickel—Aluminum Thin Foils.	1353-1357A		Direct Measurement of the Work of Fracture for Grain Boundaries of Twist Misorientation About (100) in Tungsten.	1289-1292A
Force			The Driving Force for Chemically Induced Migration of Molten Nickel Films Between Tungsten Grains.	1503-1505A
See also Loads (forces)		Free energy of activation	See Activation energy	
The Driving Force for Chemically Induced Migration of Molten Nickel Films Between Tungsten Grains.	1503-1505A	Free energy of dissociation	See Free energy of formation	
Forecasting		Free energy of formation	High-Temperature Thermodynamic Properties of the Chromium Carbides Cr ₃ C ₂ and Cr ₇ C ₂ Determined Using a Galvanic Cell Technique.	517-521B
High-Temperature Phase Chemistries and Solidification Mode Prediction in Nitrogen-Strengthened Austenitic Stainless Steels.	1339-1351A		Thermodynamics of Several Lewis-Acid-Base Stabilized Transition Metal Alloys.	2075-2085A
Forging		Fuels	See Coke	
See also Hot forging			Metallurgical coke	
Microstructural Changes During Isothermal Forging of a Co—Cr—Mo Alloy.	339-345A		Sour gas	
Formability, Temperature effects		Fumes	See Blast furnaces	
Punch-Stretching Behavior of a 2014 Aluminum Alloy in the Temperature Range 250 to 500°C.	923-929A		Bottom blown converters	
Forming			Copper converters	
See also Cold rolling			LD converters	
Controlled rolling			Reverberatory furnaces	
Forging			Smelting furnaces	
Hot isostatic pressing		Fused salts, Environment	The Effects of a Liquid Sulfate / Chloride Environment on Superalloy Stress Rupture Properties at 704°C.	23-28A
Hot rolling		Fusion welding	See Electron beam welding	
Punching			Electroslag welding	
Stretch forming			Gas tungsten arc welding	
A Generalized Quadratic Flow Law for Sheet Metals.	129-132A		Laser beam welding	
An Analysis of Biaxial Stretching of a Flat Sheet.	133-138A		Submerged arc welding	
Fossil fuels		Gallium compounds, Mechanical properties	The Mechanical Behavior of Nonstoichiometric Compounds Ni ₃ Si, Ni ₃ Ge and Fe ₃ Ge.	173-181A
See Sour gas		Galvanic cells	See Electrolytic cells	
Fouling		Galvanizing	See Hot dip galvanizing	
Injection Phenomena in Nonferrous Processes.	77-89B	Galvannealing	See Annealing	
Control of Autoclave Scaling During Acid Pressure Leaching of Nickeliferous Laterite Ore.	433-440B	Gas cooled reactors	Discussion of "Calculation Method of Equilibrium Composition in the Carbon—Hydrogen—Oxygen System and Its Application to Environments of a High-Temperature Gas Cooled Reactor"; Authors Reply.	396-400B
Fracture mechanics		Gas flow, Pressure effects	The Effect of Pressure Modulation on the Flow of Gas Through a Solid Membrane: Permeation and Diffusion of Hydrogen Through Nickel.	639-648A
A Study of Creep Crack Growth in 2219-T851 Aluminum Alloy Using a Computerized Testing System.	107-120A	Gas permeability	See Permeability	
The Role of Alpha and Beta Phases in Fatigue Crack Propagation of Ti—Mn Alloys.	155-171A			
Effect of Microstructure, Strength and Oxygen Content on Fatigue Crack Growth Rate of Ti—4.5Al—5.0Mo—1.5Cr (CORONA 5).	183-197A			
Fatigue Crack Growth Behavior of an Oxide Dispersion-Strengthened MA 956 Alloy.	527-539A			
The Effect of Microstructure and Environment on Fatigue Crack Closure of 7475 Aluminum Alloy.	555-563A			
The Fracture of Ordered (Fe, Co), V.	701-706A			
Hydrogen-Induced Slow Crack Growth in Stable Austenitic Stainless Steels.	729-733A			
Crack Paths and Hydrogen-Assisted Crack Growth Response in AISI 4340 Steel.	735-746A			
Critical Stress Intensity for Off-Axis Fracture of Al ₂ O ₃ Fiber-Reinforced Magnesium.	756-760A			
Fatigue Threshold Studies in Iron, Fe—Si and HSLA Steel. I.—Effect of Strength and Surface Asperities on Closure.	875-888A			
Fatigue Threshold Studies in Iron, Fe—Si and HSLA Steel. II.—Thermally Activated Behavior of the Effective Stress Intensity at Threshold.	889-900A			
Effect of Tempering on Quasistatic and Impact Fracture Toughness and Mechanical Properties for 5140 H Steel.	901-911A			
The Influence of Deformation Path on the Slow Strain-Rate Stress Corrosion Cracking of Admiralty Brass Sheet.	1281-1286A			
Fatigue Behavior of Carburized Steel With Internal Oxides and Nonmartensitic Microstructure Near the Surface.	1431-1436A			
Effect of Cavitation on Post-Deformation Tensile Properties of a Superplastic Copper-Base Alloy.	1443-1450A			
Fatigue Crack Growth Mechanics for Ti—6Al—4V (RA) in Vacuum and Humid Air.	1931-1940A			
Fracture mechanics, Deformation effects				
The Fracture Behavior of Tungsten Wire-Reinforced Superalloy Composites During Isothermal Forging.	501-510A			
Fracture mechanics, Microstructural effects				
Interrelations of Cooling Rate, Microstructure and Mechanical Properties in Four HSLA Steels.	1807-1817A			

Gas tungsten arc welding

Gas tungsten arc welding	
Heat Flow During the Autogenous GTA Welding of Pipes, Cooling Rate Effects in Ti—6Al—2Sn—4Zr—2Mo Weldments.	1165-1171A 1948-1952A
Germanium compounds, Mechanical properties	
The Mechanical Behavior of Nonstoichiometric Compounds Ni _x Si, Ni _x Ge and Fe _x Ga.	173-181A
Gibbs free energy	
See Free energy	
Glass	
See Metallic glasses	
Gold, Binary systems	
Thermochemistry of Binary Liquid Gold Alloys: the Systems Gold—Copper and Gold—Silver at 1379K.	203-208A
Gold, Thermal properties	
Thermochemistry of Binary Liquid Gold Alloys: the Systems Au—Ni, Au—Co, Au—Fe and Au—Mn.	573-580B
GP zone	
See Guinier Preston zone	
Grain boundaries	
See also Grain sub boundaries	
An Analytical Electron Microscope Study of the Kinetics of the Equilibrium Segregation of Bismuth in Copper.	99-105A
Consideration on the Intergranular Tempered Martensite Embrittlement.	393-395A
Direct Measurement of the Work of Fracture for Grain Boundaries of Twist Misorientation About 100° in Tungsten.	1289-1292A
The Influence of Alloying Elements on Impurity-Induced Grain Boundary Embrittlement.	1415-1430A
Revealing Deformed and Recrystallized Structures in Beta Titanium Alloys.	1493-1496A
Grain boundaries, Chemical analysis	
A Grain Boundary Etching Method for the Analysis of Intergranular Phosphorus Segregation in Iron-Based Alloys.	1563-1570A
Grain boundaries, Diffusion	
Surface Relief Produced by Diffusion-Induced Boundary Migration in Cu—Zn.	495-499A
Grain boundary sliding	
The High-Temperature Low-Cycle Fatigue Behavior of the Nickel-Based Alloy IN-617.	661-670A
The Fracture of Ordered (Fe, Co) V.	701-706A
Grain growth	
Subgrain Growth in Aluminum During Static Annealing.	1502-1503A
High-Temperature Oxidation of Iron at 1200°C in a Hot Stage Environmental Scanning Electron Microscope.	2231-2240A
Crystallographic and Morphological Characteristics of Oxidation Growth Pits in Wustite Grown at 1200°C.	2241-2246A
Grain growth, Alloying effects	
The Role of Alloy Composition on the Stability of Nitrides in Titanium-Microalloyed Steels During Weld Thermal Cycles.	33-41A
Retarded Grain Boundary Mobility in Activated Sintered Molybdenum.	1103-1110A
Grain growth, Heating effects	
The Effect of Processing Conditions and Subsequent Heat Treatment on the Transformation Behavior of Some Rapidly Solidified Copper-Based Shape Memory Alloys.	471-480A
Grain refinement	
Grain Refinement of Niobium Steels by Control of Recrystallization During Hot Rolling.	87-98A
Rapid Solidification Processing of Magnesium—Lithium Alloys.	237-240A
The Grain Refining of Aluminum and Phase Relationships in the Al—Ti—B System.	277-282A
The Role of the Constituent Phases in Determining the Low Temperature Toughness of 5.5Ni Cryogenic Steel.	2213-2219A
Grain size	
Recrystallization in Commercially Pure Aluminum.	287-297A
The Effect of Microstructure and Environment on Fatigue Crack Closure of 7475 Aluminum Alloy.	555-563A
Recovery of Creep Properties of a Vanadium-Strengthened Steel (1Cr1Mo0.75VtB) by Reheat Treatment.	707-718A
The Influence of Microstructure on Brittle Fracture Toughness.	947-959A
Pore Filling Process in Liquid Phase Sintering.	1075-1080A
Strain Hardening Behavior of Polycrystalline Iron and Low-Carbon Steels—a Statistical Analysis.	1185-1192A
Fatigue Crack Propagation in Dual-Phase Steels: Effects of Ferritic—Martensitic Microstructures on Crack Path Morphology.	1193-1207A
Residual Stress Evaluation With X-Rays in Steels Having Preferred Orientation.	1407-1414A
The Mechanical Properties of Grain-Refined Beta-CuAlNi Strain-Memory Alloys.	1613-1621A
Effect of Composition and Initial Grain Size on the Dynamic Recrystallization of Austenite in Plain Carbon Steels.	2009-2019A
Isothermal Martensitic Transformation in Fe—Ni and Fe—Ni—C Alloys at Subzero Temperatures.	2193-2203A
Grain size, Alloying effects	
Grain Refinement of Niobium Steels by Control of Recrystallization During Hot Rolling.	87-98A
Grain structure	
Steady Low of Liquid Aluminum in a Rectangular-Vertical Ingot Mold, Thermally or Electromagnetically Activated.	471-478B
Grain sub boundaries	
Subgrain Growth in Aluminum During Static Annealing.	1502-1503A
Gray cast iron	
See Gray iron	
Gray iron	
See also Nodular iron	
Gray iron, Heat treatment	
Laser Processing of Cast Iron for Enhanced Erosion Resistance.	719-728A
Gray iron	
See Gray iron	
Growth	
See Crystal growth	
Grain growth	
Growth rate	
Estimation of the Parabolic Growth Rate From the Stereological Counting Measurements.	391-393A
Kinetics of Methane Bubble Growth in a 1020 Steel.	487-494A
Interdendritic Spacing. I—Experimental Studies.	967-975A
A Numerical Finite Difference Model of Steady State Cellular and Dendritic Growth.	983-994A
Ostwald Ripening and Relaxation in Dendritic Structures.	995-1001A
A Review of the Data on the Interlamellar Spacing of Pearlite.	1019-1036A
Forced Velocity Pearlite in High-Purity Fe—C Alloys. I—Experimental.	1037-1045A
Forced Velocity Pearlite in High-Purity Fe—C Alloys. II—Theoretical.	1047-1054A
Ostwald Ripening During Liquid Phase Sintering—Effect of Volume Fraction on Coarsening Kinetics.	1081-1088A
Morphological Stability in the Presence of Fluid Flow in the Melt.	2117-2124A
Thermosolutal Convection During Directional Solidification. Studies of Directionally Solidified Eutectic Bi/MnBi at Low Growth Velocities.	2125-2137A
Growth rate, Diffusion effects	2139-2145A
Growth of Intragranular Ferrite in Fe—Ni—P Alloys.	867-874A
Growth rate, Field effects	
Effect of Applied Magnetic Fields During Directional Solidification of Eutectic Bi/Mn.	2155-2161A
Growth rate, Heating effects	
Correction to "The Kinetics of Sigma-Phase Precipitation in AISI 310 and AISI 316 Steels".	406A
Guinier Preston zone	
Metastable Phases in the Early Stage of Precipitation in Al—Mg Alloys.	835-842A
Guinier Preston zone, Stress effects	
Effects of Fatigue on the G—P Zones in Al—Zn Alloys.	1519-1529A
Gyration	
See Rotation	
Hack saws	
Microstructure and Its Effect on Toughness and Wear Resistance of Laser Surface Melted and Post-Heat Treated High-Speed Steel.	1829-1835A
Halides	
See Hydrochloric acid	
Iodides	
Sodium chloride	
Halogenation	
See Chlorination	
Halogens	
See Chlorine	
Hardenability	
See also Core hardenability	
Jominy hardenability	
Hardenability, Alloying effects	
A Quantitative Assessment of the Hardenability Increase Resulting From a Superhardenability Treatment.	2185-2191A
Hardening	
See Aging (artificial)	
Carburizing	
Dispersion hardening	
Laser beam hardening	
Nitriding	
Precipitation hardening	
Solution strengthening	
Strain hardening	
Hardness	
Estimating Hardness Response of Hot Rolled Steel by Simulating Cooling Cycles Via Jominy Bar Testing.	1507-1509A
Hardness, Alloying effects	
The Wear Behavior of Nitrogen-Implanted Metals.	2221-2229A
Hardness, Microstructural effects	
Cooling Rate Effects in Ti—6Al—2Sn—4Zr—2Mo Weldments.	1948-1952A
Hazelett process	
See Continuous casting	
Heat affected zone, Microstructure	
A New Finite Element Model for Welding Heat Sources.	299-305B
Heat affected zone, Microstructure	
The Role of Alloy Composition on the Stability of Nitrides in Titanium-Microalloyed Steels During Weld Thermal Cycles.	33-41A
Microstructure and Mechanical Properties of a Welded (Alpha + Beta) Titanium Alloy.	1589-1596A
Cooling Rate Effects in Ti—6Al—2Sn—4Zr—2Mo Weldments.	1948-1952A
Heat conduction	
See Conduction	

Heat flow See Heat transmission	
Heat flux See Heat transmission	
Heat of decomposition See Heat of formation	
Heat of dissociation See Heat of formation	
Heat of dissolution See Heat of solution	
Heat of formation Thermochemistry of Alloys of Transition Metals. IV.—Alloys of Copper With Scandium, Yttrium, Lanthanum and Lutetium.	357-368B
Heat of mixing Thermochemistry of Binary Liquid Gold Alloys: the Systems Gold—Copper and Gold—Silver at 1379K.	203-208A
Thermochemistry of Alloys of Transition Metals. IV.—Alloys of Copper With Scandium, Yttrium, Lanthanum and Lutetium.	357-368B
Thermochemistry of Binary Liquid Gold Alloys: the Systems Au—Ni, Au—Co, Au—Fe and Au—Mn.	573-580B
Heat of solution Thermochemistry of Alloys of Transition Metals. IV.—Alloys of Copper With Scandium, Yttrium, Lanthanum and Lutetium.	357-368B
Heat resistant alloys See Superalloys	
Heat transfer Comparison of Numerical Modeling Techniques for Complex, Two-Dimensional, Transient Heat-Conduction Problems.	307-318B
A Two-Dimensional Transient Model for Convection in Laser Melted Pool.	2175-2184A
Heat transmission, Welding effects Heat Flow During the Autogenous GTA Welding of Pipes.	1165-1171A
Heat treatment See also Aging (artificial)	
Annealing	
Austenitizing	
Carburizing	
Continuous annealing	
Grain refinement	
Isothermal annealing	
Nitriding	
Overaging	
Precipitation hardening	
Quench aging	
Tempering	
Recovery of Creep Properties of a Vanadium-Strengthened Steel (Cr1Mo0.75TiB) by Reheat Treatment.	707-718A
Embrittlement of Types 316L and 347 Weld Overlay by Post-Weld Heat Treatment and Hydrogen.	1475-1484A
Heating See Superheating	
Heating rate Heating Rate Dependence of Disordering in Alpha-Cu—Al Alloys.	1999-2008A
Heats (energies) See Heat of formation	
Heat of mixing	
Heat of solution	
Heavy metals See Antimony	
Bismuth	
Cadmium	
Lead (metal)	
Mercury (metal)	
Tin	
Heliac welding See Gas tungsten arc welding	
Helmholtz free energy See Free energy	
High alloy steels See Austenitic stainless steels	
Ferritic stainless steels	
Martensitic stainless steels	
Stainless steels	
High speed steel tools, Mechanical properties Microstructure and Its Effect on Toughness and Wear Resistance of Laser Surface Melted and Post-Heat Treated High-Speed Steel.	1829-1835A
High speed tool steels, Mechanical properties Microstructure and Its Effect on Toughness and Wear Resistance of Laser Surface Melted and Post-Heat Treated High-Speed Steel.	1829-1835A
High strength low alloy steels, Crystal growth Precipitation of Nb(CN) During High-Strain Rate Compression Testing of a 0.07% Niobium-Bearing Austenite.	241-243A
High strength low alloy steels, Mechanical properties Fatigue Threshold Studies in Iron, Fe—Si and HSLA Steel. I.—Effect of Strength and Surface Asperities on Closure. II.—Thermally Activated Behavior of the Effective Stress Intensity at Threshold.	875-888A
Hydrides, Crystal growth Hydride Precipitation and Dislocation Substructures in Ti—5Al—2.5Sn.	889-900A
Yielding Anisotropy From the Bauschinger Effect and Crystallographic Texture in Drawn HSLA Steel Sheet.	1699-1710A
High strength low alloy steels, Microstructure Interrelations of Cooling Rate, Microstructure and Mechanical Properties in Four HSLA Steels.	1807-1817A
High strength low alloy steels, Rolling Grain Refinement of Niobium Steels by Control of Recrystallization During Hot Rolling.	87-98A
High strength low alloy steels, Solubility Solubility of Niobium Carbide and Niobium Carbonitride in Alloyed Austenite and Ferrite.	545-553A
High strength low alloy steels, Steel making A Quantitative Assessment of the Hardenability Increase Resulting From a Superhardening Treatment.	2185-2191A
High strength low alloy steels, Structural hardening The Isothermal Decomposition of Austenite in Hot Rolled Microalloyed Steels.	1137-1145A
High strength low alloy steels, Welding The Role of Alloy Composition on the Stability of Nitrides in Titanium-Microalloyed Steels During Weld Thermal Cycles.	33-41A
High strength steels, Mechanical properties Yield Loci of HY80, HY100 Steels and Ti—6Al—2Nb—1Ta—0.8Mo.	2097-2101A
HIP See Hot isostatic pressing	
Holes Envelopes of Crack-Like Surfaces for Modeling Cavity Growth.	246-247A
Existence of the Coaxing Effect and Effects of Small Artificial Holes on Fatigue Strength of an Aluminum Alloy and 70-30 Brass.	2029-2038A
Hot brittleness See Brittleness	
Hot compacting See Compacting	
Hot cracking See Cracking (fracturing)	
Hot dip coating See Hot dip galvanizing	
Hot dip coatings, Crystal growth The Effects of Water Vapor on Solidification of Galvanized Coatings.	393-395B
Hot dip galvanizing The Effects of Water Vapor on Solidification of Galvanized Coatings.	393-395B
Hot ductility See Ductility	
Hot forging Modeling of Dynamic Material Behavior in Hot Deformation: Forging of Ti-6242.	1883-1892A
Hot gas corrosion, Coating effects The Effects of a Liquid Sulfate/Chloride Environment on Superalloy Stress Rupture Properties at 704°C.	23-28A
Hot hardness See Hardness	
Hot isostatic pressing On the Effect of NaCl on Porosity in Elemental-Blend Powder Metallurgy Ti—5Al—2.5Sn.	248-249A
Hot pressing See Hot isostatic pressing	
Hot rolling Effect of Shape of Sulfide Inclusions on Anisotropy of Inclusion Spacings and on Directionality of Ductility in Hot Rolled C—Mn Steels.	1259-1264A
Estimating Hardness Response of Hot Rolled Steel by Simulating Cooling Cycles Via Jominy Bar Testing.	1507-1509A
Hot roughing See Hot rolling	
Hot shortness See Brittleness	
Hot strength See Tensile strength	
Hot stretch forming See Stretch forming	
Hot tensile strength See Tensile strength	
Hot workability Flow and Fracture of a Multiphase Alloy MP35N for Study of Workability.	1837-1847A
Hot Workability of Three Grades of Tool Steels.	1855-1864A
Hot working See Hot forging	
Hot rolling	
Hydrides, Crystal growth Hydride Precipitation and Dislocation Substructures in Ti—5Al—2.5Sn.	813-817A
Hydrochloric acid, Reactions (chemical) Kinetic Study of Nonoxidative Leaching of Cinnabar Ore in Aqueous Hydrochloric Acid—Potassium Iodide Solutions.	13-18B

Hydrochloric acid leaching

Hydrochloric acid leaching		
Reaction Kinetics of the Ferric Chloride Leaching of Sphalerite—an Experimental Study.	5-12B	
Kinetics of Leaching of Zinc Ferrite in Aqueous Hydrochloric Acid Solutions.	221-228B	
New Hydrometallurgical Process for Obtaining Mercury From Cinnabar Ore.	229-233B	1259-1264A
Hydrogen, Alloying elements		
Effects of Hydrogen on Mechanical Properties of Vanadium—Niobium Alloys.	147-153A	
Hydrogen, Diffusion		
Prevention of Hydrogen Embrittlement by a TiO_2 Surface Layer.	597-600A	
The Effect of Pressure Modulation on the Flow of Gas Through a Solid Membrane: Permeation and Diffusion of Hydrogen Through Nickel.	639-648A	
The Room-Temperature Effective Diffusivity of Hydrogen in Vapor-Deposited Aluminum.	1953-1955A	
The Influence of Hydrogen and the Interface Phase on Fracture in Ti Code 12.	1955-1958A	
The Effect of a Tin Barrier on the Permeability of Hydrogen Through Mild Steel and Ferritic Stainless Steel.	2093-2095A	
Hydrogen, Reactions (chemical)		
Discussion of "Calculation Method of Equilibrium Composition in the Carbon—Hydrogen—Oxygen System and Its Application to Environments of a High-Temperature Gas Cooled Reactor", Authors Reply.	396-400B	
Hydrogen Attack in an Austenitic Stainless Steel.	1485-1490A	
Hydrogen, Sorption		
Kinetics of Methane Bubble Growth in a 1020 Steel.	487-494A	
Hydride Precipitation and Dislocation Substructures in Ti—5Al—2.5Sn.	813-817A	
Hydrogen compounds		
See also Hydrochloric acid		
Hydrogen sulfide		
Hydrogen compounds, Diffusion		
Kinetics of Methane Bubble Growth in a 1020 Steel.	487-494A	
Hydrogen embrittlement		
Effects of Hydrogen on Mechanical Properties of Vanadium—Niobium Alloys.	147-153A	
Hydrogen-Induced Slow Crack Growth in Stable Austenitic Stainless Steels.	729-733A	
Crack Paths and Hydrogen-Assisted Crack Growth Response in AISI 4340 Steel.	735-746A	
Embrittlement of Types 316L and 347 Weld Overlay by Post-Weld Heat Treatment and Hydrogen.	1475-1484A	
Hydrogen-Induced Interior Crack-Tip Morphologies in High-Strength Steel.	1865-1871A	
Investigation of Stress Corrosion Cracking of Cast and Forged Steel in Water.	2087-2092A	
Hydrogen embrittlement, Alloying effects		
Influence of Nitrogen Alloying on Hydrogen Embrittlement in AISI 304 Type Stainless Steels.	2205-2211A	
Hydrogen embrittlement, Coating effects		
Prevention of Hydrogen Embrittlement by a TiO_2 Surface Layer.	597-600A	
Hydrogen embrittlement, Heating effects		
Effect of Tempering on the Carbon Activity and Hydrogen Attack Kinetics of 2.25Cr—1Mo Steel.	2021-2027A	
Hydrogen embrittlement, Impurity effects		
Grain Boundary Composition and Associated Hydrogen Cracking of Modified 4130 Steels.	565-572A	
Hydrogen embrittlement, Mechanical properties		
Effects of the Additions of Boron, Phosphorus, Tin and Antimony on Oxygen-Assisted Hydrogen Embrittlement of Nickel.	519-526A	
Hydrogen reduction		
Hydrogen Reduction of Wustite Single Crystals Doped With Magnesium, Manganese, Calcium, Aluminum and Silicon. The Law of Additive Reaction Time Applied to the Hydrogen Reduction of Porous Nickel-Oxide Pellets.	383-391B	
Hydrogen Reduction Kinetics of Nickel Sulfide in the Presence of Calcium Oxide.	403-406B	
Hydrogen sulfide, Environment		
Crack Paths and Hydrogen-Assisted Crack Growth Response in AISI 4340 Steel.	735-746A	
Hydrogen sulfide, Sorption		
Influence of Stress on H_2S Adsorption on Iron.	853-860A	
Hydrometallurgy		
Relationships Between the Pourbaix Diagram for Ag—S— H_2O and Electrochemical Oxidation and Reduction of Ag_2S .	235-242B	
Ilmenite, Reduction (chemical)		
Chloridization Beneficiation of Ilmenite.	259-275B	
Immersion coating		
See Hot dip galvanizing		
Impact strength, Cooling effects		
Toughness Variation With Test Temperature and Cooling Rate for Liquid Phase Sintered W—3.5Ni—1.5Fe.	121-128A	
Impact strength, Impurity effects		
Segregation and Influence of Boron on the Impact Toughness to Ti—6Al—2Nb—1Ta—0.8Mo Welds and Castings.	1505-1507A	
Impact strength, Low temperature effects		
The Role of the Constituent Phases in Determining the Low Temperature Toughness of 5.5Ni Cryogenic Steel.	2213-2219A	2247-2249A
Impact strength, Microstructural effects		
Effect of Shape of Sulfide Inclusions on Anisotropy of Inclusion Spacings and on Directionality of Ductility in Hot Rolled C—Mn Steels.		
Impact toughness		
See Impact strength		
Impedance		
See Electrical resistance		
Impermeability		
See Permeability		
Inclusions		
See Nonmetallic inclusions		
Indium, Solubility		
Oxygen Solubility in Liquid Indium and Oxygen Diffusivity in Liquid Indium and Tin.		329-335B
Indium, Ternary systems		
Thermodynamic Properties of Liquid Mg—In—Cd Ternary Solutions.		543-546B
Indium base alloys, Phases (state of matter)		
Microstructure of One of the Ternary Eutectic Alloys in the Bi—In—Sn System.		1515-1517A
Indium compounds, Single crystals		
Bismuth Precipitation in "Monocrystalline" InBi.		1963-1967A
Inert atmospheres		
The Influence of Gas Atmospheres on the First-Stage Sintering of High-Purity Niobium Powders.		1111-1116A
Inert gas welding		
See Gas tungsten arc welding		
Ingot casting		
Steady Low of Liquid Aluminum in a Rectangular-Vertical Ingot Mold, Thermally or Electromagnetically Activated.		471-478B
Ingots, Crystal growth		
Fluid Flow From a Low to a Higher Density Liquid.		681-684B
Effects of Gravity on Interdendritic Flow: an Analytical Approach.		2095-2097A
Ingots, Heat treatment		
Comparison of Numerical Modeling Techniques for Complex, Two-Dimensional, Transient Heat-Conduction Problems.		307-318B
Injection		
Injection Phenomena in Nonferrous Processes.		77-89B
Inorganic acids		
See Hydrochloric acid		
Instability		
See Stability		
Intensity		
See Stress intensity		
Intercrystalline structure		
See Intergranular structure		
Interfaces		
The Nucleation Kinetics, Crystallography and Mechanism of the Massive Transformation.		427-435A
Growth Kinetics and Mechanism of the Massive Transformation.		437-447A
Structure of Interphase Boundaries in a Eutectic Co—Al Alloy.		1623-1626A
Interfaces, Diffusion		
Distinguishing Features of Massive Transformations.		421-425A
Interfaces, Diffusion effects		
The Influence of Hydrogen and the Interface Phase on Fracture in Ti Code 12.		1955-1958A
Interfacial energy		
See Surface energy		
Intergranular fracture, High temperature effects		
Tensile Failure Behavior of Plain Carbon Steels at Elevated Temperatures.		2059-2073A
Intergranular structure		
Effects of the Additions of Boron, Phosphorus, Tin and Antimony on Oxygen-Assisted Hydrogen Embrittlement of Nickel.		519-526A
Grain Boundary Composition and Associated Hydrogen Cracking of Modified 4130 Steels.		565-572A
Nucleation of Intragranular Ferrite in Fe—Ni—P Alloys.		861-865A
Growth of Intragranular Ferrite in Fe—Ni—P Alloys.		867-874A
Intermetallic compounds		
See Intermetallics		
Intermetallics, Crystal growth		
Crystallization Studies in the Aluminum-Rich Corner of the Aluminum—Iron—Manganese System.		1311-1317A
Intermetallics, Solubility		
Shape Changes During Dissolution of Theta Prime $CuAl_2$.		449-458A
Intermetallics, X ray analysis		
Identification of Cu_2Zr Phase in Cu—Zr Alloys.		1491-1493A
Internal friction		
Isothermal Martensitic Transformation in Fe—Ni and Fe—Ni—C Alloys at Subzero Temperatures.		2193-2203A
Internal stress		
See Residual stress		
Interrupted quenching		
Low-Temperature Improvement of the Mechanical Properties of 4340-Type Ultra-High-Strength Steel With Heat Treating Techniques Using Interrupted Quenching Method.		

Leaching

Iodides, Reactions (chemical) Kinetic Study of Nonoxidative Leaching of Cinnabar Ore in Aqueous Hydrochloric Acid—Potassium Iodide Solutions.	13-18B	Jominy hardenability Core Hardenability Calculations for Carburizing Steels.	1173-1183A
Ion implantation Metastable Alloys of Beryllium Prepared by Ion Implantation.	1787-1805A	Jominy test Estimating Hardness Response of Hot Rolled Steel by Simulating Cooling Cycles Via Jominy Bar Testing.	1507-1509A
Iron <i>See also</i> Alpha iron Gray iron Nodular iron		Junghans Rossi casting <i>See</i> Continuous casting	
Iron, Alloying elements Magnetization Measurement Associated With Gamma—Alpha Martensitic Transformation of Iron Particles in a Cu—1.5Fe Alloy.	755-756A	Kaldo process <i>See</i> Oxygen steel making	
Iron, Binary systems Thermodynamic Analysis of the Iron—Copper System. I.—The Stable and Metastable Phase Equilibria.	1921-1930A	Kaolin, Reactions (chemical) A Study of the Mechanisms of the Salt Catalyzed Carbocation Chlorination of Kaolin. Mössbauer Spectroscopy Used to Study the Removal of Iron From Clay.	695-700B 732-734B
Iron, Impurities Mössbauer Spectroscopy Used to Study the Removal of Iron From Clay.	732-734B	Kaolinite, Reactions (chemical) Chlorination of Alumina in Kaolinitic Clay.	529-533B
Iron, Mechanical properties Strain Hardening Behavior of Polycrystalline Iron and Low-Carbon Steels—a Statistical Analysis.	1185-1192A	Killed steels <i>See</i> Aluminum killed steels	
Iron, Oxidation The High-Temperature Oxidation of Metals Forming Cation-Diffusing Scales.	195B	Kinetics <i>See also</i> Reaction kinetics Observations of Melt Rate as a Function of Arc Power, CO Pressure and Electrode Gap During Vacuum Consumable Arc Remelting of Inconel 718.	117-125B 1147-1153A
The High-Temperature Oxidation of Metals Forming Cation-Diffusing Scales.	765-782A	Kinetics of Precipitation From Quenched Low-Carbon Steel.	
High-Temperature Oxidation of Iron at 1200°C in a Hot Stage Environmental Scanning Electron Microscope.	2231-2240A	Ladle additions Thermodynamics of Nozzle Blockage in Continuous Casting of Calcium-Containing Steels.	547-562B
Crystallographic and Morphological Characteristics of Oxidation Growth Pits in Wustite Grown at 1200°C.	2241-2246A	Correction to Thermodynamics of Nozzle Blockage in Continuous Casting of Calcium-Containing Steels.	547-562B
Iron, Solubility Surface Interactions in the Iron—Nitrogen System.	199-202A	Ladle metallurgy Fluid Flow and Mass Transfer in an Inductively Stirred Four-Ton Melt of Molten Steel: a Comparison of Measurements and Predictions.	633-640B
Iron, Sorption Influence of Stress on H ₂ S Adsorption on Iron.	853-860A	Lamellar structure The Effect of Fluid Flow on the Eutectic Lamellar Spacing. Pattern Selection in Solidification.	307-312A 961-966A
Iron, Ternary systems Phase Relationships in the System Fe—Na—O.	319-327B	Interlamellar Spacing in Directionally Solidified Eutectic Thin Films.	1013-1017A
Phase Relationships in the Fe—Cr—C System at Solidification Temperatures.	663-676B	A Review of the Data on the Interlamellar Spacing of Pearlite. Interlamellar Spacing in Discontinuous Precipitation.	1019-1036A 1055-1062A
Crystallization Studies in the Aluminum-Rich Corner of the Aluminum—Iron—Manganese System.	1311-1317A	Lamina <i>See</i> Laminates	
Miscibility Gap in Fe—Ni—Al and Fe—Ni—Al—Co Systems.	1819-1828A	Laminates, Mechanical properties Tensile Strength of Ni/Cu (001)Ni Triple Layer Films.	1273-1280A
Iron, Thermal properties Thermochemistry of Binary Liquid Gold Alloys: the Systems Au—Ni, Au—Co, Au—Fe and Au—Mn.	573-580B	Lanthanide metals, Thermal properties Thermochemistry of Alloys of Transition Metals. IV.—Alloys of Copper With Scandium, Yttrium, Lanthanum and Lutetium.	357-368B
Iron and steel making <i>See</i> Ironmaking Oxygen steel making		Laser beam hardening An Electron Microscope Study of the Featureless Zone Obtained During Rapid Solidification.	29-31A
Iron base alloys <i>See</i> Ferrous alloys		Laser Processing of Cast Iron for Enhanced Erosion Resistance.	719-728A
Iron compounds <i>See also</i> Iron oxides Wustite		Microstructure and Its Effect on Toughness and Wear Resistance of Laser Surface Melted and Post-Heat Treated High-Speed Steel.	1829-1835A
Iron compounds, Diffusion Discussion of "Self-Diffusion Coefficients of Carbon in Fe _x C at 723K Via the Kinetics of Formation of This Compound (and Authors' Reply).	245-246A	Laser beam welding A New Finite Element Model for Welding Heat Sources. Alloying Element Vaporization and Weld Pool Temperature During Laser Welding of AISI 202 Stainless Steel.	299-305B
Iron compounds, Mechanical properties The Mechanical Behavior of Nonstoichiometric Compounds Ni _x Si, Ni _x Ge and Fe _x Ge.	173-181A	A Two-Dimensional Transient Model for Convection in Laser Melted Pool.	641-644B 2175-2184A
The Fracture of Ordered (Fe, Co, V).	701-706A	Laser welding <i>See</i> Laser beam welding	
Iron compounds, Reduction (chemical) Whisker Growth in Reduction of Oxides.	685-694B	Lasers Rapidly Solidified Prealloyed Powders by Laser Spin Atomization.	149-153B
The Breakdown of Dense Iron Layers on Wustite in CO/CO ₂ and H ₂ /H ₂ O Systems.	701-708B	Laterites, Reactions (chemical) The Precipitation of Ni ₃ S ₂ From Sulfate Solutions.	609-615B
Iron constituents <i>See</i> Alpha iron		Lattice constant <i>See</i> Lattice parameters	
Iron ores, Reduction (chemical) Influence of MgO Addition on Mineralogy of Iron Ore Sinter.	23-34B	Lattice defects <i>See</i> Crystal defects	
Reduction of Silica in Coke With Ash of Increased Basicity.	729-732B	Lattice parameters The Mechanical Behavior of Nonstoichiometric Compounds Ni _x Si, Ni _x Ge and Fe _x Ge.	173-181A
Iron oxides <i>See also</i> Wustite		Use of Reciprocal Lattice Layer Spacing in Convergent Beam Electron Diffraction Analysis.	1299-1302A
Iron oxides, Reduction (chemical) The Effect of Emergent Dislocations on the Kinetics of Decomposition of Solid Surfaces Under Conditions of Chemical Reaction Control.	591-594B	Lattices <i>See</i> Superlattices	
Iron powder <i>See</i> Iron		Layers <i>See</i> Surface layer	
Ironmaking Hydrogen Reduction of Wustite Single Crystals Doped With Magnesium, Manganese, Calcium, Aluminum and Silicon.	383-391B	LD converters A New Approach to Investigate the Drop Size Distribution in Basic Oxygen Steelmaking.	109-116B
Isostatic pressing See Hot isostatic pressing		Leaching <i>See also</i> Ammonia pressure leaching Hydrochloric acid leaching Sulfuric acid leaching	
Isothermal annealing Correction to "The Kinetics of Sigma-Phase Precipitation in AISI 310 and AISI 316 Steels".	406A	Kinetic Study of Nonoxidative Leaching of Cinnabar Ore in Aqueous Hydrochloric Acid—Potassium Iodide Solutions.	13-18B
Isothermal treatment <i>See</i> Isothermal annealing		A Mathematical Model for Calculation of Equilibrium Solution Speciations for the FeCl ₃ —FeCl ₂ —CuCl ₂ —CuCl—HCl—NaCl—H ₂ O System at 25°C.	213-219B
Joints <i>See</i> Brazed joints Welded joints			

Leaching

An Alternative Method for the Recovery of Lithium From Spodumene.	725-726B	Lithium, Ternary systems	The Liquidus Surface for the Al—Li—Si System From 0.20% Lithium and 0.20% Silicon.	595-597A
Lead (metal), Alloying elements		Lixivation	See Leaching	
Solidification of Highly Undercooled Sn—Pb Alloy Droplets.	1303-1310A	Load distribution	See Loads (forces)	
Lead (metal), Extraction		Loads (forces)	The Effect of Overload on the Fatigue Crack Propagation in Metastable Beta Ti—V Alloys.	511-517A
Cell Measurements of the Reduction Potentials of Gas-Phase Emanating From PbS/CaO/C at Elevated Temperatures.	19-22B	Low alloy steels	See also Electrical steels Silicon steels	
Electrodissolution of Lead Sulfide in Different Acidic Media.	605-608B	Low alloy steels, Mechanical properties	The Influence of Microstructure on Brittle Fracture Toughness. Estimating Hardness Response of Hot Rolled Steel by Simulating Cooling Cycles Via Joining Bar Testing.	947-959A 1507-1509A
Lead (metal), Impurities		Low cycle fatigue	Fatigue Crack Growth Mechanics for Ti—6Al—4V (RA) in Vacuum and Humid Air.	1931-1940A
Distribution of Lead Between Copper and Matte and the Activity of PbS in Copper-Saturated Mattes.	441-449B	Low cycle fatigue, High temperature effects	The High-Temperature Low-Cycle Fatigue Behavior of the Nickel-Base Alloy IN-617.	661-670A
Lead (metal), Reduction (chemical)		Machining	See Electric discharge machining	
Energy Analysis of a Chemical Metallurgical Process.	645-654B	Macrostructure	Modification in the Aluminum—Silicon System.	459-469A
Lead (metal), Ternary systems		Magnesia	See Magnesium oxide	
Constitution of the Lead—Tin—Strontium System Up to 36 Atomic Percent Strontium.	43-54A	Magnesium, Composite materials	Critical Stress Intensity for Off-Axis Fracture of Al_2O_3 Fiber-Reinforced Magnesium.	756-760A
Lead base alloys, Crystal growth		Tensile and Fatigue Behavior of Aluminum Oxide Fiber-Reinforced Magnesium Composites. I.—Fiber Fraction and Orientation.	1389-1396A	
The Movement of Particles in Liquid Metals Due to Gravity. Primary Dendrite Spacing. II.—Experimental Studies of Pb—Pd and Pb—Au Alloys.	479-485B	Tensile and Fatigue Behavior of Aluminum Oxide Fiber-Reinforced Magnesium Composites. II.—Alloying Effects.	1397-1405A	
The Mechanisms of Formation and Prevention of Channel Segregation During Alloy Solidification.	1665-1676A	Magnesium, Ternary systems	Thermodynamic Properties of Liquid Mg—In—Cd Ternary Solutions.	543-546B
Lead base alloys, Directional solidification		Magnesium base alloys, Composite materials	Tensile and Fatigue Behavior of Aluminum Oxide Fiber-Reinforced Magnesium Composites. II.—Alloying Effects.	1397-1405A
Interdendritic Spacing. II.—A Comparison of Theory and Experiment.	977-982A	Magnesium base alloys, Phase transformations	Interlamellar Spacing in Discontinuous Precipitation.	1055-1062A
Interlamellar Spacing in Directionally Solidified Eutectic Thin Films.	1013-1017A	Magnesium base alloys, Powder technology	Rapid Solidification Processing of Magnesium—Lithium Alloys.	237-240A
Lead base alloys, Reactions (chemical)		Magnesium compounds	See Magnesium oxide	
Activities of Oxygen in Liquid Bi—Pb and Bi—Sb Alloys.	141-147B	Magnesium oxide, Reactions (chemical)	Influence of MgO Addition on Mineralogy of Iron Ore Sinter.	23-34B
Lead compounds, Binary systems		Magnetic effects	See Magnetic properties	
A Generalized Approach to the Flood—Knapp Structure-Based Model for Binary Liquid Silicates: Application and Update for the PbO—SiO ₂ System.	511-516B	Magnetic fields	See also Critical field (superconductivity) Effect of Applied Magnetic Fields During Directional Solidification of Eutectic Bi/Mn.	2155-2161A
Lead compounds, Sorption		Magnetic force	See Magnetic fields	
Distribution of Lead Between Copper and Matte and the Activity of PbS in Copper-Saturated Mattes.	441-449B	Magnetic properties, Alloying effects	Effect of Antimony on Recrystallization Behavior and Magnetic Properties of a Nonoriented Silicon Steel.	257-260A
Levitation melting		Magnetization	Magnetization Measurement Associated With Gamma—Alpha Martensitic Transformation of Iron Particles in a Cu—1.59Fe Alloy.	755-756A
Heat and Fluid Flow Phenomena in a Levitation Melted Sphere Under Zero Gravity.	183-186B	Malcomizing	See Nitriding	
Life		Manganese, Alloying effects	Thermoelectric and Morphological Effects of Peltier Pulsing on Directional Solidification of Eutectic Bi/Mn.	2147-2154A
See Fatigue life Tool life		Manganese, Alloying elements	Studies of Directionally Solidified Eutectic Bi/MnBi at Low Growth Velocities.	2139-2145A
Light metals		Effect of Applied Magnetic Fields During Directional Solidification of Eutectic Bi/Mn.	2155-2161A	
See Aluminum Aluminum base alloys Beryllium Magnesium Magnesium base alloys Titanium Titanium base alloys		A Quantitative Assessment of the Hardenability Increase Resulting From Superhardenability Treatment.	2185-2191A	
Line defects		Manganese, Diffusion	Segregation of Manganese During Intercritical Annealing of Dual-Phase Steels.	1499-1502A
See Dislocations		Manganese, Solubility	Precipitation in Rapidly Solidified Al—Mn Alloys.	1987-1997A
Liquid metals		Manganese, Ternary systems	Crystallization Studies in the Aluminum-Rich Corner of the Aluminum—Iron—Manganese System.	1311-1317A
Velocity Measurement in Wood's Metal Using an Incorporated Magnet Probe.	734-736B	Manganese, Thermal properties	Thermochemistry of Binary Liquid Gold Alloys: The Systems Au—Ni, Au—Co, Au—Fe and Au—Mn.	573-580B
Liquid metals, Reactions (chemical)				
Activities of Oxygen in Liquid Bi—Pb and Bi—Sb Alloys.	141-147B			
Liquid metals, Solubility				
The Dissolution of Titanium in Liquid Steel.	47-58B			
Oxygen Solubility in Liquid Indium and Oxygen Diffusivity in Liquid Indium and Tin.	329-335B			
Liquid metals, Thermal properties				
On the Relationship Between Interaction Coefficients.	677-680B			
Liquid phase diffusion				
See Diffusion				
Liquid phase sintering				
Toughness Variation With Test Temperature and Cooling Rate for Liquid Phase Sintered W—3.5Ni—1.5Fe.	121-128A			
Fracture Behavior of W—Ni—Fe Heavy Alloys.	331-338A			
Sintering Atmosphere Effects on the Ductility of W—Ni—Fe Heavy Metals.	747-754A			
Densification and Structural Development in Liquid Phase Sintering.	1065-1074A			
Pore Filling Process in Liquid Phase Sintering.	1075-1080A			
Ostwald Ripening During Liquid Phase Sintering—Effect of Volume Fraction on Coarsening Kinetics.	1081-1088A			
Interphase Boundary Precipitation in Liquid Phase Sintered W—Ni—Fe and W—Ni—Cu Alloys.	1089-1098A			
Carbide Composition Change During Liquid Phase Sintering of a Wear Resistant Alloy.	1099-1102A			
The Driving Force for Chemically Induced Migration of Molten Nickel Films Between Tungsten Grains.	1503-1505A			
Liquidus				
The Liquidus Surface for the Al—Li—Si System From 0.20% Lithium and 0.20% Silicon.	595-597A			
Lithium, Alloying elements				
Correction to "Effect of Lithium on the Mechanical Properties and Microstructure of SiC Whisker Reinforced Aluminum Alloys".	406A			
Lithium, Recovering				
An Alternative Method for the Recovery of Lithium From Spodumene.	725-726B			

Martensite, Crystal lattices	
On the Substructure of Athermal and Isothermal Martensites Formed in an Fe—21Ni—4Mn Alloy.	1555-1562A
Martensitic stainless steels, Corrosion	
Near-Threshold Corrosion Fatigue Crack Growth Behavior of Type 422 Stainless Steel at Controlled Maximum Stress Intensities.	693-699A
Martensitic stainless steels, Mechanical properties	
The Wear Behavior of Nitrogen-Implanted Metals	2221-2229A
Martensitic transformations	
Stress-Induced Martensite Transformation: Cycling and Two-Way Shape Memory Training in Cu—Zn—Al Alloys.	313-321A
The Effect of Processing Conditions and Subsequent Heat Treatment on the Transformation Behavior of Some Rapidly Solidified Copper-Base Shape Memory Alloys.	471-480A
Some Effects of Parent Phase Aging on the Martensitic Transformation in a Cu—Al—Ni Shape Memory Alloy.	621-626A
Magnetization — Measurement — Associated With Gamma \rightarrow Alpha Martensitic Transformation of Iron Particles in a Cu—1.59Fe Alloy.	755-756A
The Effect of Microstructure on the Deformation Modes and Mechanical Properties of Ti—6Al—2Nb—1Ta—0.8Mo—Widmanstätten Structures.	1229-1245A
"Premartensitic" Phase in Nickel—Aluminum Thin Foils.	1353-1357A
The Stabilization of Martensite in Cu—Zn—Al Shape Memory Alloys.	1977-1986A
Isothermal Martensitic Transformation in Fe—Ni and Fe—Ni—C Alloys at Subzero Temperatures.	2193-2203A
Influence of Nitrogen Alloying on Hydrogen Embrittlement in AISI 304 Type Stainless Steels.	2205-2211A
Martensitic transformations, Cooling effects	
The Effect of Quench Rate on the Microstructure, Mechanical Properties and Corrosion Behavior of U—6 Wt.-% Nb.	1319-1330A
Martensitic transformations, Deformation effects	
Effect of Prior Cold Work on the Martensite Transformation in SAE 52100.	299-306A
Martensitic transformations, Microstructural effects	
The Mechanical Properties of Grain-Refined Beta-CuAlNi Strain-Memory Alloys.	1613-1621A
Mass flow, Environmental effects	
Heat and Fluid Flow Phenomena in a Levitation Melted Sphere Under Zero Gravity.	183-186B
Mass transfer	
Vacuum Refining Copper Melts to Remove Bismuth, Arsenic and Antimony.	251-257B
Fluid Flow and Mass Transfer in an Inductively Stirred Four-Ton Melt of Molten Steel: a Comparison of Measurements and Predictions.	633-640B
Massive type transformation	
Thermodynamics of the Massive Transformation.	411-419A
Distinguishing Features of Massive Transformations.	421-425A
The Nucleation Kinetics, Crystallography and Mechanism of the Massive Transformation.	427-435A
Growth Kinetics and Mechanism of the Massive Transformation.	437-447A
Master alloys	
The Grain Refining of Aluminum and Phase Relationships in the Al—Ti—B System.	277-282A
Mathematical analysis	
A Generalized Quadratic Flow Law for Sheet Metals.	129-132A
An Analysis of Biaxial Stretching of a Flat Sheet.	133-138A
A Test for Randomness of Spatial Distribution of Particles During Phase Transformations.	243-245A
Localized Necking of Sheet at Negative Minor Strains.	323-329A
The Law of Additive Reaction Time Applied to the Hydrogen Reduction of Porous Nickel-Oxide Pellets.	403-406B
Ternary Diffusion: Solutions With Diffusion Coefficients Linearly Dependent on Concentrations.	1359-1366A
Subgrain Growth in Aluminum During Static Annealing.	1502-1503A
Effects of Gravity on Interdendritic Flow: an Analytical Approach.	2095-2097A
Mathematical models	
Heat Transfer and Fluid Flow in Plasma Spraying.	59-70B
Numerical Models for Casting Solidification. I — The Coupling of the Boundary Element and Finite Difference Methods for Solidification Problems.	91-99B
Numerical Models for Casting Solidification. II — Application of the Boundary Element Method to Solidification Problems.	101-107B
A Mathematical Model for Calculation of Equilibrium Solution Speciations for the FeCl_3 — FeCl_2 — CuCl_2 — CuCl — HCl — NaCl — H_2O System at 25°C.	213-219B
Envelopes of Crack-Like Surfaces for Modeling Cavity Growth.	246-247A
A New Finite Element Model for Welding Heat Sources.	299-305B
Comparison of Numerical Modeling Techniques for Complex, Two-Dimensional, Transient Heat-Conduction Problems.	307-318B
Estimation of the Parabolic Growth Rate From the Stereological Counting Measurements.	391-393A
Discussion of "Calculation Method of Equilibrium Composition in the Carbon—Hydrogen—Oxygen System and Its Application to Environments of a High-Temperature Gas Cooled Reactor"; Authors Reply.	396-400B
A Collision Model for Fume Formation in Metal Oxidation.	587-593A
On the Relationship Between Interaction Coefficients.	677-680B
Growth of Intragranular Ferrite in Fe—Ni—P Alloys.	867-874A
Pattern Selection in Solidification.	961-966A
Interdendritic Spacing. II — A Comparison of Theory and Experiment.	977-982A
A Numerical Finite Difference Model of Steady State Cellular and Dendritic Growth.	983-994A
Forced Velocity Pearlite in High-Purity Fe—C Alloys. II — Theoretical.	1047-1054A
Heat Flow During the Autogenous GTA Welding of Pipes.	1165-1171A
Nucleation of Recrystallization in a Co—Cr—Mo Alloy.	1335-1338A
The Influence of Alloying Elements on Impurity-Induced Grain Boundary Embrittlement.	1415-1430A
Thermosolutal Convection During Directional Solidification.	2125-2137A
Mathematics	
See Finite element method	
Mathematical analysis	
Mathematical models	
Mattes	
See Copper mattes	
Nickel mattes	
Measuring instruments	
See Calorimeters	
Probes	
Mechanical properties	
See also Brittleness	
Compressive properties	
Compressive strength	
Creep (materials)	
Creep life	
Creep rate	
Creep recovery	
Creep rupture strength	
Creep strength	
Ductile brittle transition	
Ductility	
Elongation	
Fatigue (materials)	
Fatigue life	
Fatigue limit	
Fatigue strength	
Fracture toughness	
Hardness	
Hydrogen embrittlement	
Impact strength	
Internal friction	
Modulus of elasticity	
Plastic flow	
Residual stress	
Shear stress	
Superplasticity	
Temper brittleness	
Tensile properties	
Tensile strength	
Toughness	
Wear resistance	
Yield strength	
Mechanical properties, Alloying effects	
Correction to "Effect of Lithium on the Mechanical Properties and Microstructure of SiC Whisker Reinforced Aluminum Alloys".	406A
Mechanical properties, Welding effects	
Microstructure and Mechanical Properties of a Welded (Alpha + Beta) Titanium Alloy.	1589-1596A
Mechanical tests	
See Fatigue tests	
Tension tests	
Mechanics	
See Fluid dynamics	
Fracture mechanics	
Kinetics	
Melt spinning	
Ribbon — Substrate Adhesion Dynamics in Chill Block Melt-Spinning Processes.	155-161B
The Effect of Processing Conditions and Subsequent Heat Treatment on the Transformation Behavior of Some Rapidly Solidified Copper-Base Shape Memory Alloys.	471-480A
Melting	
See Electron beam melting	
Levitation melting	
Vacuum arc melting	
Melting furnaces	
See Bottom blown converters	
Copper converters	
LD converters	
Reverberatory furnaces	
Memory (shape)	
See Shape memory	
Mercury (metal), Extraction	
Kinetic Study of Nonoxidative Leaching of Cinnabar Ore in Aqueous Hydrochloric Acid—Potassium Iodide Solutions.	13-18B
New Hydrometallurgical Process for Obtaining Mercury From Cinnabar Ore.	229-233B
Mercury compounds, Reduction (electrolytic)	
New Hydrometallurgical Process for Obtaining Mercury From Cinnabar Ore.	229-233B
Metal carbides	
See also Boron carbide	
Chromium carbide	
Niobium carbide	
Metal carbides, Crystal growth	
Formation of Metal Carbide Powder by Spark Machining of Reactive Metals.	1117-1127A

Metal working

Metal working		
See Cold rolling		
Cold working		
Controlled rolling		
Forging		
Hot rolling		
Stretch forming		
Metallic glasses, Casting		
Ribbon—Substrate Adhesion Dynamics in Chill Block Melt-Spinning Processes.	155-161B	793-811A
Metallic glasses, Phase transformations		
Precipitation in Rapidly Solidified Al—Mn Alloys.	1987-1997A	913-922A
Metallographic structures		
See Microstructure		
Metallography		
See Chemical etching		
Specimen preparation		
Metalloid compounds		
See Silicon carbide		
Silicon compounds		
Silicon dioxide		
Metalloids		
See Arsenic		
Boron		
Silicon		
Metallurgical coke, Reactions (chemical)		
Reduction of Silica in Coke With Ash of Increased Basicity.	729-732B	1531-1543A
Metallurgical constituents		
See Sigma phase		
Metastability		
Calculations of Stable and Metastable Equilibrium Diagrams of the Ag—Cu and Cd—Zn Systems.	261-268A	1505-1507A
Meteorites, Crystal lattices		
Nucleation of Intragranular Ferrite in Fe—Ni—P Alloys.	861-865A	1589-1596A
Microalloyed steels		
See High strength low alloy steels		
Microalloying		
Effect of Niobium on Austenite Recrystallization and Pearlite Colony Size in a Microalloyed Eutectoid Steel.	1496-1499A	1819-1828A
Microparticles		
See Particles		
Microscopy		
See Electron microscopy		
Scanning electron microscopy		
Microshrinkage		
See Shrinkage		
Microstructure		
See also Fibrous structure		
Lamellar structure		
Structure of Vacuum Brazed BNi-5 Joint of Inconel 718	609-620A	459-469A
Effects of Prior Cold Rolling and Post-Temper Rolling on the Properties of Continuously Annealed Low-Carbon Dual-Phase Steel.	671-678A	661-670A
Forced Velocity Pearlite in High-Purity Fe—C Alloys. I.—Experimental	1037-1045A	67-72A
Carbide Composition Change During Liquid Phase Sintering of a Wear Resistant Alloy.	1099-1102A	1741-1752A
The Effect of Minor Alloying Elements on the Mechanical Properties of Al—Cu—Li Alloys.	1209-1220A	1103-1110A
High-Temperature Phase Chemistries and Solidification Mode Prediction in Nitrogen-Strengthened Austenitic Stainless Steels.	1339-1351A	481-486A
The Microstructure and Tensile Properties of a Splat-Quenched Al—Cu—Li—Mg—Zr Alloy.	1367-1377A	783-792A
Microstructure—Strength Relations in a Hardenable Stainless Steel With 18% Chromium, 1.5% Molybdenum and 5% Nickel.	1379-1387A	
Structure and Properties of Rapidly Solidified Dispersion-Strengthened Titanium Alloys. I.—Characterization of Dispersoid Distribution, Structure and Chemistry.	1451-1463A	
Microstructure, Composition effects		
Interrelations of Cooling Rate, Microstructure and Mechanical Properties in Four HSLA Steels.	1807-1817A	
Microstructure, Cooling effects		
The Effect of Rapid Solidification Velocity on the Microstructure of Ag—Cu Alloys.	55-66A	
The Effect of Quench Rate on the Microstructure, Mechanical Properties and Corrosion Behavior of U—6 Wt % Nb.	1319-1330A	
Cooling Rate Effects in Ti—6Al—2Sn—4Zr—2Mo Weldments.	1948-1952A	
Microstructure, Deformation effects		
Microstructural Changes During Isothermal Forging of a Co—Cr—Mo Alloy.	339-345A	
The Effect of Hot Working on Structure and Strength of a Precipitation Strengthened Austenitic Stainless Steel.	347-368A	
Microstructural Changes Produced in a Multifilamentary Nb/Ti Composite by Cold Work and Heat Treatment.	843-852A	
Local Microstructural Modification in Dynamically Consolidated Metal Powders.	1653-1664A	
Modeling of Dynamic Material Behavior in Hot Deformation: Forging of Ti-6242.	1883-1892A	
Microstructure, Heating effects		
Modulated Microstructures in Copper—Zinc and Copper—Aluminum—Nickel.	269-276A	59-70B
Consequences of the Heterogeneous Nitriding of Alpha-Iron: Dislocation Production and Oriented Precipitation.	827-837A	1273-1280A
Chromium Depletion in the Vicinity of Carbides in Sensitized Austenitic Stainless Steels.		
Tensile Properties of a 2014 Aluminum Alloy in the Temperature Range 250 to 500°C.		
Effect of Retrogression and Reaging Treatments on the Microstructure of Al-7075-T651.		
Microstructure, Impurity effects		
Segregation and Influence of Boron on the Impact Toughness to Ti—6Al—2Nb—1Ta—0.8Mo Welds and Castings.		
Microstructure, Welding effects		
Microstructure and Mechanical Properties of a Welded (Alpha + Beta) Titanium Alloy.		
Mill scale		
See Scale (corrosion)		
Miscibility		
Miscibility Co ₂ in Fe—Ni—Al and Fe—Ni—Al—Co Systems.		
Modification		
Modification in the Aluminum—Silicon System.		
Modulus of elasticity		
The High-Temperature Low-Cycle Fatigue Behavior of the Nickel-Based Alloy IN-617.		
Moisture		
See Water		
Molality		
See Concentration (composition)		
Molarity		
See Concentration (composition)		
Molten metals		
See Liquid metals		
Molten salts		
See Fused salts		
Molybdenum, Binary systems		
Solute Stabilization for H.C.P.-F.C.C. Transitions: Co—Mo.		
Molybdenum, Mechanical properties		
A Microstructural Investigation of the Origin of Brittle Behavior in the Transverse Direction in Molybdenum-Based Alloy Bars.		
Molybdenum, Powder technology		
Retarded Grain Boundary Mobility in Activated Sintered Molybdenum.		
Molybdenum, Ternary systems		
Nickel—Aluminum—Molybdenum Phase Equilibria.		
Determination of Isothermal Sections of Nickel-Rich Portion of Ni—Cr—Mo System by Analytical Electron Microscopy.		
Molybdenum base alloys, Mechanical properties		
A Microstructural Investigation of the Origin of Brittle Behavior in the Transverse Direction in Molybdenum-Based Alloy Bars.		
Molybdenum chromium nickel steels		
See Nickel chromium molybdenum steels		
Molybdenum chromium steels		
See Chromium molybdenum steels		
Molybdenum nickel chromium steels		
See Nickel chromium molybdenum steels		
Molybdenum steels		
See Chromium molybdenum steels		
Chromium molybdenum vanadium steels		
Nickel chromium molybdenum steels		
Monocrystals		
See Single crystals		
Monotectic reactions		
The Solidification of Monotectic Alloys—Microstructures and Phase Spacings.		1003-1012A
Mullitaxial stress		
See Axial stress		
Muriatic acid		
See Hydrochloric acid		
Natural gas		
See Sour gas		
Necking		
Localized Necking of Sheet at Negative Minor Strains.		323-329A
Neutral atmospheres		
See Inert atmospheres		
Nickel, Alloying additive		
Retarded Grain Boundary Mobility in Activated Sintered Molybdenum.		1103-1110A
Nickel, Alloying elements		
Nucleation of Intragranular Ferrite in Fe—Ni—P Alloys.		861-865A
Growth of Intragranular Ferrite in Fe—Ni—P Alloys.		867-874A
Measurement and Analysis of Distribution Coefficients in Fe—Ni Alloys Containing Sulfur and/or Phosphorus. I.—K _M and K _P .		1677-1685A
Isothermal Martensitic Transformation in Fe—Ni and Fe—Ni—C Alloys at Subzero Temperatures.		2193-2203A
Nickel, Coatings		
Heat Transfer and Fluid Flow in Plasma Spraying.		
Nickel, Composite materials		
Tensile Strength of Ni/Cu/(001)Ni Triple Layer Films.		

Nickel, Crystal growth Numerical Treatment of Rapid Solidification.	369-381B	Nickel chromium molybdenum steels, Welding Slag Metal Reactions During Submerged Arc Welding of Alloy Steels.	217-227A
Nickel, Diffusion The Effect of Pressure Modulation on the Flow of Gas Through a Solid Membrane: Permeation and Diffusion of Hydrogen Through Nickel.	639-648A	Nickel chromium steels See also Nickel chromium molybdenum steels	
The Driving Force for Chemically Induced Migration of Molten Nickel Films Between Tungsten Grains.	1503-1505A	Nickel chromium steels, Diffusion A Grain Boundary Etching Method for the Analysis of Intergranular Phosphorus-Segregation in Iron-Based Alloys.	1563-1570A
Nickel, Extraction Control of Autoclave Scaling During Acid Pressure Leaching of Nickeliferous Laterite Ore.	433-440B	Nickel chromium steels, Mechanical properties Core Hardenability Calculations for Carburizing Steels.	1173-1183A
Hydrogen Reduction Kinetics of Nickel Sulfide in the Presence of Calcium Oxide.	719-723B	Nickel compounds, Mechanical properties The Mechanical Behavior of Nonstoichiometric Compounds Ni ₃ Si, Ni ₃ Ge and Fe ₃ Ge.	173-181A
Nickel, Mechanical properties Effects of the Additions of Boron, Phosphorus, Tin and Antimony on Oxygen-Assisted Hydrogen Embrittlement of Nickel.	519-526A	Improved Strength and Ductility in Ni ₃ Al by Boron Modification and Rapid Solidification.	399-402A
Nickel, Oxidation The High-Temperature Oxidation of Metals Forming Cation-Diffusing Scales.	195B	Nickel compounds, Oxidation Oxidation of Nickel Sulfide.	127-133B
The High-Temperature Oxidation of Metals Forming Cation-Diffusing Scales.	765-782A	Nickel compounds, Reduction (chemical) The Law of Additive Reaction Time Applied to the Hydrogen Reduction of Porous Nickel-Oxide Pellets.	403-406B
Nickel, Recovering The Precipitation of Ni ₃ S ₂ From Sulfate Solutions.	609-615B	Hydrogen Reduction Kinetics of Nickel Sulfide in the Presence of Calcium Oxide.	719-723B
Nickel, Refining The Interfacial Kinetics of the Reaction of CO ₂ With Liquid Nickel.	655-661B	Nickel mattes, Reduction (chemical) Oxidation of Nickel Sulfide.	127-133B
Nickel, Solubility Distribution of Nickel Between Copper—Nickel and Alumina-Saturated Iron Silicate Slags.	33-37B	Nickel molybdenum chromium steels See Nickel chromium molybdenum steels	
Nickel, Ternary systems Nickel—Aluminum—Molybdenum Phase Equilibria: Zero-Flux Planes and Flux Reversals in the Cu—Ni—Zn System at 775°C.	481-486A	Nickel molybdenum steels See Nickel chromium molybdenum steels	
Determination of Isothermal Sections of Nickel-Rich Portion of Ni—Cr—Mo System by Analytical Electron Microscopy: Miscibility Gap in Fe—Ni—Al and Fe—Ni—Al—Co Systems.	649-659A	Nickel plating Enhanced Tensile Strength for Electrodeposited Nickel/Copper Multilayer Composites.	2039-2040A
Nickel—Aluminum—Molybdenum Phase Equilibria: Zero-Flux Planes and Flux Reversals in the Cu—Ni—Zn System at 775°C.	783-792A	Nickel steels See also Nickel chromium molybdenum steels Nickel chromium steels	
1819-1828A	Nickel steels, Mechanical properties Consideration on the Intergranular Tempered Martensite Embrittlement.	393-395A	
Nickel, Thermal properties Thermochemistry of Binary Liquid Gold Alloys: The Systems Au—Ni, Au—Co, Au—Fe and Au—Mn.	573-580B	The Role of the Constituent Phases in Determining the Low Temperature Toughness of 5.5Ni Cryogenic Steel.	2213-2219A
Nickel base alloys, Brazing Structure of Vacuum Brazed BNi-5 Joint of Inconel 718.	609-620A	Niobium, Alloying additive Effect of Niobium on Austenite Recrystallization and Pearlite Colony Size in a Microalloyed Eutectoid Steel.	1496-1499A
Nickel base alloys, Extrusion The Structure of Extruded NiAl.	1129-1136A	Niobium, Alloying elements Grain Refinement of Niobium Steels by Control of Recrystallization During Hot Rolling.	87-98A
Nickel base alloys, Mechanical properties Behavior of Fe—Ni—Cr Alloys in a Complex Multioxidant Environment Under Conditions of Dynamic Straining.	11-22A	Niobium, Powder technology The Influence of Gas Atmospheres on the First-Stage Sintering of High-Purity Niobium Powders.	1111-1116A
The Effects of a Liquid Sulfate/Chloride Environment on Superalloy Stress Rupture Properties at 704°C.	23-28A	Niobium base alloys, Composite materials Microstructural Changes Produced in a Multifilamentary Nb/Ti Composite by Cold Work and Heat Treatment.	843-852A
The Effect of Protective Coatings on the High-Temperature Properties of a Gamma Prime-Strengthened Nickel-Based Superalloy.	229-236A	Niobium base alloys, Mechanical properties Effects of Hydrogen on Mechanical Properties of Vanadium—Niobium Alloys.	147-153A
Effect of Environment on Creep Crack Growth in PM/HIP René 95.	381-388A	Niobium carbide, Solubility Solubility Product for Niobium Carbide in Austenite.	541-544A
The High-Temperature Low-Cycle Fatigue Behavior of the Nickel-Based Alloy IN-617.	661-670A	Solubility of Niobium Carbide and Niobium Carbonitride in Alloyed Austenite and Ferrite.	545-553A
Prior Deformation Effects on Creep and Fracture in Inconel Alloy X-750.	1437-1441A	Niobium compounds See also Niobium carbide	
Crack Growth in a Single-Crystal Superalloy at Elevated Temperature.	1711-1719A	Niobium compounds, Composite materials Effect of Tantalum Additions Upon <i>In Situ</i> Prepared Nb ₃ Sn—Cu Superconducting Wire.	283-286A
Elevated-Temperature Compressive Steady State Deformation and Failure in the Oxide Dispersion Strengthened Alloy MA 6000E.	1753-1762A	Nitriding Consequences of the Heterogeneous Nitriding of Alpha-Iron: Dislocation Production and Oriented Precipitation.	627-637A
Tensile Behavior of Inconel Alloy X-750 in Air and Vacuum at Elevated Temperatures.	1763-1767A	Resistometric Study of Fe—V and Fe—Mo Nitrided by Constant Activity Aging.	1545-1554A
Effect of Oxidation Kinetics on the Near Threshold Fatigue Crack Growth Behavior of a Nickel-Based Superalloy.	1769-1775A	Nitrogen, Alloying elements Influence of Nitrogen Alloying on Hydrogen Embrittlement in AISI 304 Type Stainless Steels.	2205-2211A
Deformation and Fracture Behavior of Ni/Mo/Al (Gamma/Gamma Prime-Alpha) <i>In Situ</i> Composite.	1905-1919A	The Wear Behavior of Nitrogen-Implanted Metals.	2221-2229A
Nickel base alloys, Melting Observations of Melt Rate as a Function of Arc Power, CO Pressure and Electrode Gap During Vacuum Consumable Arc Remelting of Inconel 718.	117-125B	Nitrogen, Solubility Surface Interactions in the Iron—Nitrogen System.	199-202A
Nickel base alloys, Phases (state of matter) Premartensitic Phase in Nickel—Aluminum Thin Foils.	1353-1357A	Nitrogen compounds See Carbides	
Nickel base alloys, Powder technology Rapidly Solidified Prealloyed Powders by Laser Spin Atomization.	149-153B	Nodular iron, Heat treatment Laser Processing of Cast Iron for Enhanced Erosion Resistance.	719-728A
The Fracture Behavior of Tungsten Wire-Reinforced Superalloy Composites During Isothermal Forging.	501-510A	Nonferrous alloys, Phase transformations The Nucleation Kinetics, Crystallography and Mechanism of the Massive Transformation.	427-435A
Nickel base alloys, Structural hardening Precipitation of Beta Phase in the Gamma Prime Particles of Nickel-Based Superalloy.	1331-1334A	Nonferrous smelting See Smelting	
Nickel chromium molybdenum steels, Mechanical properties Crack Paths and Hydrogen-Assisted Crack Growth Response in AISI 4340 Steel.	735-746A	Nonmetallic inclusions Effect of Shape of Sulfide Inclusions on Anisotropy of Inclusion Spacings and on Directionality of Ductility in Hot Rolled C—Mn Steels.	1259-1264A
Core Hardenability Calculations for Carburizing Steels.	1173-1183A	Notch brittleness See Brittleness	
Hydrogen-Induced Interior Crack-Tip Morphologies in High-Strength Steel.	1865-1871A		
Low-Temperature Improvement of the Mechanical Properties of 4340-Type Ultra-High-Strength Steel With Heat Treating Techniques Using Interrupted Quenching Method.	2247-2249A		
Nickel chromium molybdenum steels, Powder technology Local Microstructural Modification in Dynamically Consolidated Metal Powders.	1653-1664A		

Notch ductility

Notch ductility		
See Ductility		
Notch impact strength		
See Impact strength		
Notched bar tensile test		
See Tension tests		
Nozzles		
Thermodynamics of Nozzle Blockage in Continuous Casting of Calcium-Containing Steels.	547-562B	
Correction to Thermodynamics of Nozzle Blockage in Continuous Casting of Calcium-Containing Steels.	547-562B	
Nuclear reactors		
See Gas cooled reactors		
Sodium cooled reactors		
Nucleation		
Recrystallization in Commercially Pure Aluminum.	287-297A	
Numerical Treatment of Rapid Solidification.	369-381B	
The Nucleation Kinetics, Crystallography and Mechanism of the Massive Transformation.	427-435A	
Nucleation of Intragranular Ferrite in Fe—Ni—P Alloys.	861-865A	
Solidification of Highly Undercooled Sn—Pb Alloy Droplets.	1303-1310A	
Nucleation of Recrystallization in a Co—Cr—Mo Alloy.	1335-1338A	
Nuclei (transformation)		
See Nucleation		
Obstructing		
See Blocking		
Open flame furnaces		
See Reverberatory furnaces		
Optical masers		
See Lasers		
Order disorder		
Some Effects of Parent Phase Aging on the Martensitic Transformation in a Cu—Al—Ni Shape Memory Alloy.	621-626A	
The Fracture of Ordered (Fe, Co), V.	701-706A	
Order disorder, Heating effects		
Heating Rate Dependence of Disordering in Alpha-Cu—Al Alloys.	1999-2008A	
Ordering		
See Order disorder		
Ores		
See Chalcocyanite		
Ilmenite		
Iron ores		
Laterites		
Sphalerite		
Organic compounds, Chemical analysis		
Electrochemical Determination of Thiourea and Glue in the Industrial Copper Electrolyte.	451-459B	
Orientation		
See also Preferred orientation		
Consequences of the Heterogeneous Nitriding of Alpha-Iron: Dislocation Production and Oriented Precipitation.	627-637A	
Direct Measurement of the Work of Fracture for Grain Boundaries of Twist Misorientation About 100° in Tungsten.	1289-1292A	
Tensile and Fatigue Behavior of Aluminum Oxide Fiber-Reinforced Magnesium Composites. I.—Fiber Fraction and Orientation.	1389-1396A	
High-Temperature Oxidation of Iron at 1200°C in a Hot Stage Environmental Scanning Electron Microscope.	2231-2240A	
OSM process		
See Oxygen steel making		
Overaging		
Temper-Aging of Continuously Annealed Low-Carbon Dual-Phase Steel.	73-86A	
Oxidation		
Behavior of Fe—Ni—Cr Alloys in a Complex Multioxidant Environment Under Conditions of Dynamic Straining.	11-22A	
The High-Temperature Oxidation of Metals Forming Cation-Diffusing Scales.	195B	
The High-Temperature Oxidation of Metals Forming Cation-Diffusing Scales.	765-782A	
Effect of Oxidation Kinetics on the Near Threshold Fatigue Crack Growth Behavior of a Nickel-Based Superalloy.	1769-1775A	
High-Temperature Oxidation of Iron at 1200°C in a Hot Stage Environmental Scanning Electron Microscope.	2231-2240A	
Crystallographic and Morphological Characteristics of Oxidation Growth Pits in Wustite Grown at 1200°C.	2241-2246A	
Oxidation, High temperature effects		
In Situ Observation of Copper Oxidation at High Temperatures.	573-586A	
A Collision Model for Fume Formation in Metal Oxidation.	587-593A	
Oxidation rate		
Oxidation of Nickel Sulfide.	127-133B	
Oxide cathodes		
See Cathodes		
Oxides		
See also Aluminum oxide		
Carbon dioxide		
Iron oxides		
Magnesium oxide		
Silicon dioxide		
Titanium dioxide		
Wustite		
Oxides, Binary systems		
A Generalized Approach to the Flood—Knapp Structure-Based Model for Binary Liquid Silicates: Application and Update for the PbO—SiO ₂ System.	511-516B	
Oxides, Reduction (chemical)		
The Law of Additive Reaction Time Applied to the Hydrogen Reduction of Porous Nickel-Oxide Pellets.	403-406B	
Whisker Growth in Reduction of Oxides.	685-694B	
Oxidizing		
See Oxidation		
Oxygen, Diffusion		
Isotope Exchange Studies of the Rate of Dissociation of CO ₂ on Liquid Iron Oxides and CaO-Saturated Calcium Ferrites.	563-571B	
Oxygen, Environment		
Chlorination of Cobalt in an Argon—1% Oxygen—1% Chlorine Mixture at 1000K.	403-405A	
Oxygen, Reactions (chemical)		
Activities of Oxygen in Liquid Bi—Pb and Bi—Sb Alloys.	141-147B	
Activity Coefficient of Oxygen in Copper—Sulfur Melts.	337-344B	
Activity Coefficient of CuO _{0.5} in Alumina-Saturated Iron Silicate Slags.	345-349B	
Discussion of “Calculation Method of Equilibrium Composition in the Carbon—Hydrogen—Oxygen System and Its Application to Environments of a High-Temperature Gas Cooled Reactor”; Authors Reply.	396-400B	
Oxygen, Solubility		
Interactions of Gases in Molten Salts: Carbon Dioxide and Oxygen in Cryolite Alumina Melts.	39-46B	
Oxygen Solubility in Liquid Indium and Oxygen Diffusivity in Liquid Indium and Tin.	329-335B	
Oxygen, Ternary systems		
Phase Relationships in the System Fe—Na—O.	319-327B	
Oxygen blown converters		
See LD converters		
Oxygen compounds, Oxidation		
Thermodynamics of the Oxidation of Rare Earth Oxsulfides at High Temperatures.	523-528B	
Oxygen conversion processes		
See Oxygen steel making		
Oxygen steel making		
Mixing of Concentric Gas Jets Issuing Vertically Into a Liquid: A New Approach to Investigate the Drop Size Distribution in Basic Oxygen Steelmaking.	71-75B	
See also Preferred orientation		
Consequences of the Heterogeneous Nitriding of Alpha-Iron: Dislocation Production and Oriented Precipitation.	109-116B	
Direct Measurement of the Work of Fracture for Grain Boundaries of Twist Misorientation About 100° in Tungsten.	1111-1116A	
Tensile and Fatigue Behavior of Aluminum Oxide Fiber-Reinforced Magnesium Composites. I.—Fiber Fraction and Orientation.	109-116B	
High-Temperature Oxidation of Iron at 1200°C in a Hot Stage Environmental Scanning Electron Microscope.	819-833A	
Packing (crystal density)		
See Crystal structure		
Parameters		
See Lattice parameters		
Particle shape, Diffusion effects		
Shape Changes During Dissolution of Theta Prime-CuAl ₁₂ .	449-458A	
Particle size		
A New Approach to Investigate the Drop Size Distribution in Basic Oxygen Steelmaking.	109-116B	
The Influence of Gas Atmospheres on the First-Stage Sintering of High-Purity Niobium Powders.	1111-1116A	
Particle size distribution		
A New Approach to Investigate the Drop Size Distribution in Basic Oxygen Steelmaking.	109-116B	
Rapid Solidification of a Droplet-Processed Stainless Steel.	819-833A	
Structure and Properties of Rapidly Solidified Dispersion-Strengthened Titanium Alloys. I.—Characterization of Dispersoid Distribution, Structure and Chemistry.	1451-1463A	
Particles, Diffusion		
Ostwald Ripening During Liquid Phase Sintering—Effect of Volume Fraction on Coarsening Kinetics.	1081-1088A	
Patterns		
See Diffraction patterns		
Pearlite		
A Review of the Data on the Interlamellar Spacing of Pearlite.	1019-1036A	
Pearlite, Alloying effects		
Effect of Niobium on Austenite Recrystallization and Pearlite Colony Size in a Microalloyed Eutectoid Steel.	1496-1499A	
Pearlite, Crystal growth		
Forced Velocity Pearlite in High-Purity Fe—C Alloys. I.—Experimental.	1037-1045A	
Forced Velocity Pearlite in High-Purity Fe—C Alloys. II.—Theoretical.	1047-1054A	
Penetration		
The Effect of Pressure Modulation on the Flow of Gas Through a Solid Membrane: Permeation and Diffusion of Hydrogen Through Nickel.	639-648A	
Perforations		
See Holes		
Peripheral speed		
See Rotation		
Permeability, Coating effects		
The Effect of a Tin Barrier on the Permeability of Hydrogen Through Mild Steel and Ferritic Stainless Steel.	2093-2095A	
Permeation		
See Penetration		
Phase boundary		
The Gamma Phase Boundary of CuBe Alloys.	939-941A	

Interphase Boundary Precipitation in Liquid Phase Sintered W—Ni—Fe and W—Ni—Cu Alloys.	1089-1098A	
Phase decomposition, Alloying effects		
The Isothermal Decomposition of Austenite in Hot Rolled Microalloyed Steels.	1137-1145A	
Phase decomposition, Stress effects		
Precipitation of Nb(CN) During High-Strain Rate Compression Testing of a 0.07% Niobium-Bearing Austenite.	241-243A	
Phase diagram reactions		
See Austenitizing		
Eutectoid reactions		
Martensite transformations		
Monotectic reactions		
Phase decomposition		
Phase diagrams		
See also Pourbaix diagrams		
Constitution of the Lead—Tin—Strontium System Up to 36 Atomic Percent Strontium.	43-54A	
Solute Stabilization for H.C.P.—F.C.C. Transitions: Co—Mo.	67-72A	
Calculations of Stable and Metastable Equilibrium Diagrams of the Ag—Cu and Cd—Zn Systems.	261-268A	
The Grain Refining of Aluminum and Phase Relationships in the Al—Ti—B System.	277-282A	
Phase Relationships in the System Fe—Na—O.	319-327B	
Nickel—Aluminum—Molybdenum Phase Equilibria.	481-486A	
Thermodynamic Properties of Liquid Mg—In—Cd Ternary Solutions.	543-546B	
The Liquidus Surface for the Al—Li—Si System From 0.20% Lithium and 0.20% Silicon.	595-597A	
Phase Relationships in the Fe—Cr—C System at Solidification Temperatures.	663-676B	
Determination of Isothermal Sections of Nickel-Rich Portion of Ni—Cr—Mo System by Analytical Electron Microscopy.	783-792A	
Miscibility Gap in Fe—Ni—Al and Fe—Ni—Al—Co Systems.	1819-1828A	
Thermodynamic Analysis of the Iron—Copper System. I.—The Stable and Metastable Phase Equilibria.	1921-1930A	
Phase stability		
Melastable Phases in the Early Stage of Precipitation in Al—Mg Alloys.	835-842A	
The Role of the Constituent Phases in Determining the Low Temperature Toughness of 5.5Ni Cryogenic Steel.	2213-2219A	
Phase stability, Heating effects		
The Stabilization of Martensite in Cu—Zn—Al Shape Memory Alloys.	1977-1986A	
Phase structure		
See Solid phases		
Phase transformations		
See also Austenitizing		
Martensitic transformations		
Massive type transformation		
A Test for Randomness of Spatial Distribution of Particles During Phase Transformations.	243-245A	
Interlamellar Spacing in Discontinuous Precipitation.	1055-1062A	
Phase transformations, Cooling effects		
Electron Microscopy Studies of Charge Density Wave (CDW) Transitions in a Ti _{5.6} Ni ₃₇ Al _{36.8} Alloy.	1155-1163A	
Phase transformations, Heating effects		
Microstructure—Strength Relations in a Hardenable Stainless Steel With 16% Chromium, 1.5% Molybdenum and 5% Nickel.	1379-1387A	
A Quantitative Assessment of the Hardenability Increase Resulting From a Superhardenability Treatment.	2185-2191A	
Phases (state of matter)		
See also Sigma phase		
Solid phases		
Structure of Vacuum Brazed BNi-5 Joint of Inconel 718.	609-620A	
Phases (state of matter), Chemical analysis		
High-Temperature Phase Chemistry and Solidification Mode Prediction in Nitrogen-Strengthened Austenitic Stainless Steels.	1339-1351A	
Phosphates, Reactions (chemical)		
Thermodynamics of Phosphate and Phosphide in CaO—CaF ₂ Melts.	351-356B	
Phosphides, Reactions (chemical)		
Thermodynamics of Phosphate and Phosphide in CaO—CaF ₂ Melts.	351-356B	
Phosphorus, Alloying elements		
Nucleation of Intragranular Ferrite in Fe—Ni—P Alloys.	861-865A	
Growth of Intragranular Ferrite in Fe—Ni—P Alloys.	867-874A	
Phosphorus, Diffusion		
Grain Boundary Composition and Associated Hydrogen Cracking of Modified 4130 Steels.	565-572A	
A Grain Boundary Etching Method for the Analysis of Intragranular Phosphorus-Segregation in Iron-Based Alloys.	1563-1570A	
Measurement and Analysis of Distribution Coefficients in Fe—Ni Alloys Containing Sulfur and/or Phosphorus. I.—K _{Ni} and K _P .	1677-1685A	
Phosphorus, Dopants		
Effects of the Additions of Boron, Phosphorus, Tin and Antimony on Oxygen-Assisted Hydrogen Embrittlement of Nickel.	519-526A	
Phosphorus, Impurities		
The Influence of Alloying Elements on Impurity-Induced Grain Boundary Embrittlement.	1415-1430A	
Photo oxidation		
See Oxidation		
Physical metallurgy		
Process R & D—the Noranda Process.	411-432B	
Distribution of Lead Between Copper and Matte and the Activity of PbS in Copper-Saturated Mattes.	441-449B	
Physical properties		
See Adhesion		
Diffusivity		
Heat of formation		
Heat of mixing		
Heat of solution		
Magnetic properties		
Miscibility		
Permeability		
Porosity		
Solid solubility		
Solubility		
Texture		
Thermal expansion		
Thermal stability		
Thermoelectricity		
Piezoresistance		
See Electrical resistance		
Pipe, Welding		
Heat Flow During the Autogenous GTA Welding of Pipes.	1165-1171A	
Plasma arc plating		
See Plasma spraying		
Plasma arc spraying		
See Plasma spraying		
Plasma jet spraying		
See Plasma spraying		
Plasma spraying		
Heat Transfer and Fluid Flow in Plasma Spraying.	59-70B	
Plastic flow		
A Generalized Quadratic Flow Law for Sheet Metals.	129-132A	
Flow and Fracture of a Multiphase Alloy MP35N for Study of Workability.	1837-1847A	
Plastic flow, Microstructural effects		
Slip Directions in B2 Fe-Al Alloys.	395-399A	
High-Temperature Plastic-Flow Behavior of Mixtures of Austenite, Cementite, Ferrite and Pearlite in Plain-Carbon Steels.	2041-2058A	
Plastic flow, Stress effects		
Strain-Rate Sensitivity of Zinc Sheet.	1265-1271A	
Plasticity		
See Superplasticity		
Plating		
See Copper plating		
Duplex plating		
Nickel plating		
Polycrystals, Mechanical properties		
Dependence of Dynamic Fracture Resistance on Crack Velocity in Tungsten. II.—Bicrystals and Polycrystals.	1253-1258A	
Pore formation		
Pore Filling Process in Liquid Phase Sintering.	1075-1080A	
Pores		
See Porosity		
Porosity		
Sintering Atmosphere Effects on the Ductility of W—Ni—Fe Heavy Metals.	747-754A	
Densification and Structural Development in Liquid Phase Sintering.	1065-1074A	
Porosity, Composition effects		
On the Effect of NaCl on Porosity in Elemental-Blend Powder Metallurgy Ti—5Al—2.5Sn.	248-249A	
Postforming		
See Forming		
Potassium compounds, Reactions (chemical)		
Kinetic Study of Nonoxidative Leaching of Cinnabar Ore in Aqueous Hydrochloric Acid—Potassium Iodide Solutions.	13-18B	
Pots (electrolytic)		
See Electrolytic cells		
Pourbaix diagrams		
Relationships Between the Pourbaix Diagram for Ag—S—H ₂ O and Electrochemical Oxidation and Reduction of Ag ₂ S.	235-242B	
Powder compacts, Composite materials		
The Fracture Behavior of Tungsten Wire-Reinforced Superalloy Composites During Isothermal Forging.	501-510A	
Powder compacts, Mechanical properties		
The Microstructure and Tensile Properties of a Splat-Quenched Al—Cu—Li—Mg—Zr Alloy.	1367-1377A	
Powder compacts, Physical properties		
On the Effect of NaCl on Porosity in Elemental-Blend Powder Metallurgy Ti—5Al—2.5Sn.	248-249A	
Powder metallurgy		
See Sintering (powder metallurgy)		
Powder metallurgy parts, Mechanical properties		
Toughness Variation With Test Temperature and Cooling Rate for Liquid Phase Sintered W—3.5Ni—1.5Fe.	121-128A	
Fracture Behavior of W—Ni—Fe Heavy Alloys.	331-338A	
Sintering Atmosphere Effects on the Ductility of W—Ni—Fe Heavy Metals.	747-754A	

Powder metallurgy parts

Carbide Composition Change During Liquid Phase Sintering of a Wear Resistant Alloy.	1099-1102A	Precipitation heat treatment
See Aging (artificial)		
Overaging		
Precipitation hardening		
Preferred orientation		
Residual Stress Evaluation With X-Rays in Steels Having Preferred Orientation.		
Influence of Texture on Fatigue Properties of Ti—6Al—4V.		1407-1414A
Pressing		
See Hot isostatic pressing		
Pressure		
See Vacuum		
Prestressing		
Prior Deformation Effects on Creep and Fracture in Inconel Alloy X-750.		
Probes, Design		
Velocity Measurement in Wood's Metal Using an Incorporated Magnet Probe.		734-736B
Projection (forecasting)		
See Forecasting		
Propagation		
See Crack propagation		
Properzi process		
See Continuous casting		
Prosthetics		
See Surgical implants		
Protective atmospheres		
See Controlled atmospheres		
Punching		
Punch-Stretching Behavior of a 2014 Aluminum Alloy in the Temperature Range 250 to 500°C.		923-929A
Quaternary systems, Phases (state of matter)		
Miscibility Gap in Fe—Ni—Al and Fe—Ni—Al—Co Systems.		1819-1828A
Quench aging		
Kinetics of Precipitation From Quenched Low-Carbon Steel.		1147-1153A
Quenching (cooling)		
See also Interrupted quenching		
Quench aging		
Rapid solidification		
Splat cooling		
Calorimetric Studies of Al—Cu Alloys: Quench Sensitivity and Sample Preparation.		389-391A
The Effect of Quench Rate on the Microstructure, Mechanical Properties and Corrosion Behavior of U—6 Wt.% Nb.		1319-1330A
Quenching stresses		
See Residual stress		
Radiocrystallography		
See Crystallography		
Rail steels, Crystal growth		
Effect of Niobium on Austenite Recrystallization and Pearlite Colony Size in a Microalloyed Eutectoid Steel.		1496-1499A
Raney nickel		
See Catalysts		
Rapid solidification		
The Effect of Rapid Solidification Velocity on the Microstructure of Ag—Cu Alloys.		55-66A
Rapid Solidification Processing of Magnesium—Lithium Alloys.		237-240A
Numerical Treatment of Rapid Solidification.		369-381B
Improved Strength and Ductility in Ni ₃ Al by Boron Modification and Rapid Solidification.		399-402A
Rapid Solidification of a Droplet-Processed Stainless Steel.		819-833A
Solidification of Highly Undercooled Sn—Pb Alloy Droplets.		1303-1310A
Structure and Properties of Rapidly Solidified Dispersion-Strengthened Titanium Alloys. I.—Characterization of Dispersion Distribution, Structure and Chemistry.		1451-1463A
Precipitation in Rapidly Solidified Al—Mn Alloys.		1987-1997A
Rare earth compounds, Oxidation		
Thermodynamics of the Oxidation of Rare Earth Oxsulfides at High Temperatures.		523-528B
Rare earth metals		
See also Lanthanide metals		
Rare earth metals, Alloying elements		
Structure and Properties of Rapidly Solidified Dispersion-Strengthened Titanium Alloys. I.—Characterization of Dispersion Distribution, Structure and Chemistry.		1451-1463A
Structure and Properties of Rapidly Solidified Dispersion-Strengthened Titanium Alloys. II.—Tensile and Creep Properties.		1465-1474A
Precipitation kinetics		
Reaction Kinetics of the Ferric Chloride Leaching of Sphalerite—an Experimental Study.		5-12B
Kinetic Study of Nonoxidative Leaching of Cinnabar Ore in Aqueous Hydrochloric Acid—Potassium Iodide Solutions.		13-18B
The Dissolution of Titanium in Liquid Steel.		47-58B
Kinetics of Leaching of Zinc Ferrite in Aqueous Hydrochloric Acid Solutions.		221-228B
The Law of Additive Reaction Time Applied to the Hydrogen Reduction of Porous Nickel-Oxide Pellets.		403-406B
The Effect of Emergent Dislocations on the Kinetics of Decomposition of Solid Surfaces Under Conditions of Chemical Reaction Control.		591-594B
Precipitates		
Consideration on the Intergranular Tempered Martensite Embrittlement.		393-395A
Solubility Product for Niobium Carbide in Austenite.		541-544A
Solubility of Niobium Carbide and Niobium Carbonitride in Alloyed Austenite and Ferrite.		545-553A
The Influence of Microstructure on Brittle Fracture Toughness.		947-959A
Microstructure—Strength Relations in a Hardenable Stainless Steel With 16% Chromium, 1.5% Molybdenum and 5% Nickel.		1379-1387A
Bismuth Precipitation in "Monocrystalline" InBi.		1963-1967A
Precipitates, Crystal growth		
Estimation of the Parabolic Growth Rate From the Stereological Counting Measurements.		391-393A
Dissolution Kinetics of Widmanstätten Gamma—Ag ₂ Al Precipitates.		1969-1975A
Precipitates, Crystal lattices		
Interphase Boundary Precipitation in Liquid Phase Sintered W—Ni—Fe and W—Ni—Cu Alloys.		1089-1098A
Precipitation of Beta Phase in the Gamma Prime Particles of Nickel-Base Superalloy.		1331-1334A
Precipitates, Heating effects		
Microstructural Changes Produced in a Multifilamentary Nb/Ti Composite by Cold Work and Heat Treatment.		843-852A
Precipitates, Phase transformations		
Magnetization Measurement Associated With Gamma → Alpha Martensite Transformation of Iron Particles in a Cu—1.59Fe Alloy.		755-758A
Precipitates, Solubility		
Shape Changes During Dissolution of Theta Prime—CuAl ₂ .		449-458A
Precipitates, Welding effects		
The Role of Alloy Composition on the Stability of Nitrides in Titanium-Microalloyed Steels During Weld Thermal Cycles.		33-41A
Precipitates, X ray analysis		
Identification of Cu ₂ Zr Phase in Cu—Zr Alloys.		1491-1493A
Precipitation		
Consequences of the Heterogeneous Nitriding of Alpha-Iron: Dislocation Production and Oriented Precipitation.		627-637A
Kinetics of Precipitation From Quenched Low-Carbon Steel.		1147-1153A
Precipitation of Beta Phase in the Gamma Prime Particles of Nickel-Base Superalloy.		1331-1334A
Precipitation in Rapidly Solidified Al—Mn Alloys.		1987-1997A
Precipitation, Alloying effects		
The Isothermal Decomposition of Austenite in Hot Rolled Microalloyed Steels.		1137-1145A
Precipitation, Stress effects		
Precipitation of Nb(CN) During High-Strain Rate Compression Testing of a 0.07% Niobium-Bearing Austenite.		241-243A
Hydride Precipitation and Dislocation Substructures in Ti—5Al—2.5Sn.		813-817A
Precipitation hardening		
See also Aging (artificial)		
Calorimetric Studies of Al—Cu Alloys: Quench Sensitivity and Sample Preparation.		389-391A
Some Effects of Parent Phase Aging on the Martensitic Transformation in a Cu—Al—Ni Shape Memory Alloy.		621-626A
Metastable Phases in the Early Stage of Precipitation in Al—Mg Alloys.		835-842A
Age Hardening in Cu—2.5%Ti.		931-937A
Kinetics of Aging in an Fe—12Ni—6Mn Maraging Alloy.		1947-1948A
Dissolution Kinetics of Widmanstätten Gamma—Ag ₂ Al Precipitates.		1969-1975A
Precipitation hardening, Cooling effects		
The Effect of Quench Rate on the Microstructure, Mechanical Properties and Corrosion Behavior of U—6 Wt.% Nb.		1319-1330A
Precipitation hardening alloys, Forging		
The Effect of Hot Working on Structure and Strength of a Precipitation Strengthened Austenitic Stainless Steel.		347-368A
Precipitation hardening alloys, Mechanical properties		
Effects of Fatigue on the G—P Zones in Al—Zn Alloys.		1519-1529A
Precipitation hardening steels, Mechanical properties		
Prevention of Hydrogen Embrittlement by a TiO ₂ Surface Layer.		597-600A
Precipitation hardening steels, Structural hardening		
Microstructure—Strength Relations in a Hardenable Stainless Steel With 16% Chromium, 1.5% Molybdenum and 5% Nickel.		1379-1387A

The Interfacial Kinetics of the Reaction of CO₂ With Liquid Nickel.	655-661B	Reviews	A Review of the Data on the Interlamellar Spacing of Pearlite. 1019-1036A
The Breakdown of Dense Iron Layers on Wustite in CO/CO₂ and H₂/H₂O Systems.	701-708B	Rheological properties	Compression of Semisolid Dendritic Sn—Pb Alloys at Low Strain Rates. 173-181B
Establishment of Product Morphology During the Initial Stages of Wustite Reduction.	709-717B	Ribbons (metallic)	See Tapes (metallic)
Hydrogen Reduction Kinetics of Nickel Sulfide in the Presence of Calcium Oxide.	719-723B	Roasting	See also Sintering (roasting) Oxidation of Nickel Sulfide. 127-133B
Recovery of Elemental Sulfur During the Oxidative Ammoniacal Leaching of Chalcopyrite.	726-729B	Roller hearth annealing	See Continuous annealing
Kinetics of Aging in an Fe—12Ni—6Mn Maraging Alloy.	1947-1948A	Rolling	See Cold rolling Controlled rolling Hot rolling
Reaction sintering		Rotating beam fatigue tests	See Fatigue tests
See Activated sintering		Rotation	The Effect of Fluid Flow on the Eutectic Lamellar Spacing. 307-312A
Reactions (chemical)		Rotational velocity	See Rotation
See Carbothermic reactions		Rotational vibration	See Rotation
Chemical attack		Roughing (rolling)	See Hot rolling
Chlorination		Rupture strength	See Creep rupture strength
Desulfurizing		S N diagrams, Stress effects	Existence of the Coaxing Effect and Effects of Small Artificial Holes on Fatigue Strength of an Aluminum Alloy and 70-30 Brass. 2029-2038A
Hydrogen reduction		Saline water	See Salt water
Oxidation		Salt (sodium chloride)	See Sodium chloride
Reactivity (chemical)		Salt roasting	See Chloridizing
See Activity (chemical)		Salt water, Environment	Near-Threshold Corrosion Fatigue Crack Growth Behavior of Type 422 Stainless Steel at Controlled Maximum Stress Intensities. 693-696A
Reactors		Sandwich plating	See Duplex plating
See Gas cooled reactors		Sap process	See Dispersion hardening
Sodium cooled reactors		Saws	See Hack saws
Recovery		Scale (corrosion)	Control of Autoclave Scaling During Acid Pressure Leaching of Nickeliferous Laterite Ore. 433-440B
See also Creep recovery		Scale (corrosion), Crystal growth	The High-Temperature Oxidation of Metals Forming Cation-Diffusing Scales. 195B
Precipitation of Nb(CN) During High-Strain Rate Compression Testing of a 0.07% Niobium-Bearing Austenite.	241-243A	In Situ Observation of Copper Oxidation at High Temperatures. 573-586A	
Recrystallization		The High-Temperature Oxidation of Metals Forming Cation-Diffusing Scales. 765-782A	
See also Grain refinement		Scale removal	See Descaling
Grain Refinement of Niobium Steels by Control of Recrystallization During Hot Rolling.	87-98A	Scanning electron microscopy	In Situ Observation of Copper Oxidation at High Temperatures. 573-586A
Precipitation of Nb(CN) During High-Strain Rate Compression Testing of a 0.07% Niobium-Bearing Austenite.	241-243A	A Collision Model for Fume Formation in Metal Oxidation. 587-593A	
Nucleation of Recrystallization in a Co—Cr—Mo Alloy.	1335-1338A	Screw dislocations	High-Temperature Oxidation of Iron at 1200°C in a Hot Stage Environmental Scanning Electron Microscope. 2231-2240A
Revealing Deformed and Recrystallized Structures in Beta Titanium Alloys.	1493-1496A	Season cracking	See Stress corrosion cracking
Recrystallization, Alloying effects		Seeding	See Nucleation
Effect of Antimony on Recrystallization Behavior and Magnetic Properties of a Nonoriented Silicon Steel.	257-260A	Segregations	An Analytical Electron Microscope Study of the Kinetics of the Equilibrium Segregation of Bismuth in Copper. 99-105A
Effect of Niobium on Austenite Recrystallization and Pearlite Colony Size in a Microalloyed Eutectoid Steel.	1496-1499A	Convection in the Two-Phase Zone of Solidifying Alloys. 163-172B	
Recrystallization, Composition effects		Compression of Semisolid Dendritic Sn—Pb Alloys at Low Strain Rates. 173-181B	
Effect of Composition and Initial Grain Size on the Dynamic Recrystallization of Austenite in Plain Carbon Steels.	2009-2019A	Grain Boundary Composition and Associated Hydrogen Cracking of Modified 4130 Steels. 565-572A	
Recrystallization, Deformation effects		Structural Effects and Band Segregate Formation During the Electromagnetic Stirring of Strand-Cast Steel. 581-589B	
Recrystallization in Commercially Pure Aluminum.	287-297A	The Influence of Alloying Elements on Impurity-Induced Grain Boundary Embrittlement. 1415-1430A	
The Structure of Extruded NiAl.	1129-1136A	Segregation and Influence of Boron on the Impact Toughness to Ti—6Al—2Nb—1Ta—0.8Mo Welds and Castings. 1505-1507A	
Red hardness		A Grain Boundary Etching Method for the Analysis of Intergranular Phosphorus-Segregation in Iron-Based Alloys. 1583-1570A	
See Hardness		Measurement and Analysis of Distribution Coefficients in Fe—Ni Alloys Containing Sulfur and/or Phosphorus. 1677-1685A	
Red shortness		I. K _N and K _P . Effects of Gravity on Interdendritic Flow: an Analytical Approach. 2095-2097A	
See Brittleness			
Reduction (chemical)			
See Direct reduction			
Hydrogen reduction			
Reduction (electrolytic)			
See Electrowinning			
Reduction (metal working)			
See Cold rolling			
Hot rolling			
Refining			
See Electroslag refining			
Vacuum refining			
Refractory alloys			
See Molybdenum base alloys			
Niobium base alloys			
Tungsten base alloys			
Vanadium base alloys			
Refractory metal compounds			
See Chromium carbide			
Niobium carbide			
Niobium compounds			
Vanadium compounds			
Refractory metals			
See Chromium			
Molybdenum			
Niobium			
Tantalum			
Tungsten			
Vanadium			
Reinforcement			
See Fiber composites			
Residual stress			
The Effect of Overload on the Fatigue Crack Propagation in Metastable Beta Ti—V Alloys.	511-517A		
Residual Stress Evaluation With X-Rays in Steels Having Preferred Orientation.	1407-1414A		
Resistance welds			
See Welded joints			
Revaporation			
See Vaporizing			
Reverberatory furnaces			
The Nature and Source of Copper Smelter Particulate Emissions.	617-622B		

Segregations

The Mechanisms of Formation and Prevention of Channel Segregation During Alloy Solidification.	2163-2173A
Segregations, Heating effects	
Segregation of Manganese During Intercritical Annealing of Dual-Phase Steels.	1499-1502A
Self diffusion	
See Diffusion	
Semicontinuous casting	
See Continuous casting	
Sensitizing	
Chromium Depletion in the Vicinity of Carbides in Sensitized Austenitic Stainless Steels.	793-811A
Shape	
See Particle shape	
Shape memory	
Stress-Induced Martensitic Transformation Cycling and Two-Way Shape Memory Training in Cu-Zn-Al Alloys.	313-321A
The Effect of Processing Conditions and Subsequent Heat Treatment on the Transformation Behavior of Some Rapidly Solidified Copper-Based Shape Memory Alloys.	471-480A
Some Effects of Parent Phase Aging on the Martensitic Transformation in a Cu-Al-Ni Shape Memory Alloy.	621-626A
Shape memory, Microstructural effects	
The Mechanical Properties of Grain-Refined Beta-CuAlNi Shape-Memory Alloys.	1613-1621A
Shear properties	
See Shear stress	
Shear stress	
Critical Stress Intensity for Off-Axis Fracture of Al_2O_3 Fiber-Reinforced Magnesium.	756-760A
Sheet metal, Mechanical properties	
Localized Necking of Sheet at Negative Minor Strains.	323-329A
Tensile Properties of a 2014 Aluminum Alloy in the Temperature Range 250 to 500°C.	913-922A
Strain-Rate Sensitivity of Zinc Sheet.	1265-1271A
Sheet metal, Metal working	
A Generalized Quadratic Flow Law for Sheet Metals.	129-132A
An Analysis of Biaxial Stretching of a Flat Sheet.	133-138A
Sheet steel	
See Strip steel	
Shielded arc welding	
See Gas tungsten arc welding	
Submerged arc welding	
Shielding	
Mixing of Concentric Gas Jets Issuing Vertically Into a Liquid.	71-75B
Shrinkage, Alloying effects	
Retarded Grain Boundary Mobility in Activated Sintered Molybdenum.	1103-1110A
Sigma phase, Crystal growth	
Correction to "The Kinetics of Sigma-Phase Precipitation in AISI 310 and AISI 316 Steels".	406A
Silica	
See Silicon dioxide	
Silicates, Reactions (chemical)	
An Alternative Method for the Recovery of Lithium From Spodumene.	725-726B
Silicon, Alloying elements	
Modification in the Aluminum-Silicon System.	459-469A
Fatigue Threshold Studies in Iron, Fe-Si and HSLA Steel. I.—Effect of Strength and Surface Asperities on Closure.	875-888A
Fatigue Threshold Studies in Iron, Fe-Si and HSLA Steel. II.—Thermally Activated Behavior of the Effective Stress Intensity at Threshold.	889-900A
Silicon, Diffusion	
Reduction of Silica in Coke With Ash of Increased Basicity.	729-732B
Silicon, Ternary systems	
The Liquidus Surface for the Al-Li-Si System From 0.20% Lithium and 0.20% Silicon.	595-597A
Silicon carbide, Composite materials	
Creep Rupture of a Silicon Carbide Reinforced Aluminum Composite.	139-146A
Correction to "Effect of Lithium on the Mechanical Properties and Microstructure of SiC Whisker Reinforced Aluminum Alloys".	406A
Silicon compounds	
See also Silicon carbide	
Silicon dioxide	
Silicon compounds, Mechanical properties	
The Mechanical Behavior of Nonstoichiometric Compounds $\text{Ni}_x\text{Si}_y\text{Ge}_z\text{Fe}_w\text{Ga}_t$.	173-181A
Silicon dioxide, Binary systems	
A Generalized Approach to the Flood-Knapp Structure-Based Model for Binary Liquid Silicates: Application and Update for the $\text{PbO}-\text{SiO}_2$ System.	511-516B
Silicon iron	
See Silicon steels	
Silicon steels	
See also Electrical steels	
Silicon steels, Crystal growth	
Effect of Antimony on Recrystallization Behavior and Magnetic Properties of a Nonoriented Silicon Steel.	257-260A
Silicon steels, Mechanical properties	
Fatigue Crack Propagation in Dual-Phase Steels: Effects of Ferrite—Martensitic Microstructures on Crack Path Morphology.	1193-1207A
Silver, Alloying elements	
Dissolution Kinetics of Widmanstätten Gamma- Ag_3Al Precipitates.	1969-1975A
Silver, Binary systems	
Thermochrometry of Binary Liquid Gold Alloys: the Systems Gold—Copper and Gold—Silver at 1379K. Calculations of Stable and Metastable Equilibrium Diagrams of the $\text{Ag}-\text{Cu}$ and $\text{Cd}-\text{Zn}$ Systems.	203-208A 261-268A
Silver, Dopants	
Metallosol Alloys of Beryllium Prepared by Ion Implantation.	1787-1805A
Silver, Extraction	
Relationships Between the Pourbaix Diagram for $\text{Ag}-\text{H}_2\text{O}$ and Electrochemical Oxidation and Reduction of Ag_3S .	235-242B
Silver base alloys, Microstructure	
The Effect of Rapid Solidification Velocity on the Microstructure of Ag-Cu Alloys.	55-66A
Silver base alloys, Phase transformations	
Growth Kinetics and Mechanism of the Massive Transformation.	437-447A
Simulation	
See also Computer simulation	
Estimating Hardness Response of Hot Rolled Steel by Simulating Cooling Cycles Via Jominy Bar Testing.	1507-1509A
Convection-Induced Distortion of a Solid/Liquid Interface. Morphological Stability in the Presence of Fluid Flow in the Melt.	2109-2115A
Thermosolutal Convection During Directional Solidification.	2117-2124A 2125-2137A
Single crystals, Corrosion	
Stress-Corrosion Cracking of Copper Single Crystals.	1941-1946A
Single crystals, Mechanical properties	
Dependence of Dynamic Fracture Resistance on Crack Velocity in Tungsten. I.—Single Crystals.	1247-1251A
Crack Growth in a Single-Crystal Superalloy at Elevated Temperature.	1711-1719A
Single crystals, Phases (state of matter)	
Bismuth Precipitation in "Monocrystalline" InBi.	1963-1967A
Single crystals, Reduction (chemical)	
Hydrogen Reduction of Wustite Single Crystals Doped With Magnesium, Manganese, Calcium, Aluminum and Silicon.	383-391B
Sinter (material), Chemical analysis	
Influence of MgO Addition on Mineralogy of Iron Ore Sinter.	23-34B
Sintered metal	
See Powder metallurgy parts	
Sintering	
See Sintering (powder metallurgy)	
Sintering (roasting)	
Sintering (powder metallurgy)	
See also Activated sintering	
Liquid phase sintering	
The Influence of Gas Atmospheres on the First-Stage Sintering of High-Purity Niobium Powders.	1111-1116A
Sintering (roasting)	
Influence of MgO Addition on Mineralogy of Iron Ore Sinter.	23-34B
Size distribution (particle)	
See Particle size distribution	
Slab casting	
The Formation of Oscillation Marks in the Continuous Casting of Steel Slabs.	493-509B
Slag fuming	
Injection Phenomena in Nonferrous Processes.	77-89B
Slags	
Activity Coefficient of $\text{CuO}_{0.5}$ in Alumina-Saturated Iron Slags.	345-349B
Thermodynamics of Phosphate and Phosphide in $\text{CaO}-\text{CaF}_2$ Melts.	351-356B
Slags, Diffusion	
Isotope Exchange Studies of the Rate of Dissociation of CO_2 on Liquid Iron Oxides and CaO-Saturated Calcium Ferrites.	563-571B
Slags, Solubility	
Distribution of Nickel Between Copper-Nickel and Alumina-Saturated Iron Silicate Slags.	33-37B
Equilibrium Between Silica-Saturated Iron Silicate Slags and Molten Cu-As, Cu-Sb and Cu-Bi Alloys.	535-541B
Slip	
See also Slip planes	
Mechanisms of Slow Fatigue Crack Growth in High-Strength Aluminum Alloys: Role of Microstructure and Environment.	369-379A
The Effect of Microstructure and Environment on Fatigue Crack Closure of 7475 Aluminum Alloy.	555-563A
Age Hardening in Cu-2.5%Ti.	931-937A
Dependence of Dynamic Fracture Resistance on Crack Velocity in Tungsten. I.—Single Crystals.	1247-1251A
Slip, Microstructural effects	
The Effect of Microstructure on the Deformation Modes and Mechanical Properties of Ti-6Al-2Nb-1Ta-0.8Mo. I.—Widmanstätten Structures.	1229-1245A
Slip planes, Deformation effects	
Slip Directions in B2 Fe-Al Alloys.	395-399A

Smelter dust, Chemical analysis	
The Nature and Source of Copper Smelter Particulate Emissions.	617-622B
Smelting	
Process R & D—the Noranda Process.	411-432B
Smelting furnaces	
The Nature and Source of Copper Smelter Particulate Emissions.	617-622B
Soaking	
Comparison of Numerical Modeling Techniques for Complex, Two-Dimensional, Transient Heat-Conduction Problems.	307-318B
Sodium, Reactions (chemical)	
The Determination of the Thermodynamics of the NaF—AlF ₃ —Al ₂ O ₃ System With a Solid Electrolyte Cell.	135-139B
Sodium, Ternary systems	
Phase Relationships in the System Fe—Na—O.	319-327B
Sodium aluminum fluoride	
See Cryolite	
Sodium chloride, Environment	
Discussion of "The Effect of Heat Treatments on the Corrosion Fatigue Properties of 13% Chromium Stainless Steel in 3% NaCl Aqueous Solution" (and Authors' Reply).	250-251A
Sodium chloride, Impurities	
On the Effect of NaCl on Porosity in Elemental-Blend Powder Metallurgy Ti—5Al—2.5Sn.	248-249A
Sodium compounds	
See Sodium chloride	
Sodium cooled reactors	
Phase Relationships in the System Fe—Na—O.	319-327B
Soft annealing	
See Annealing	
Softening	
See Overaging	
Solid phases	
A Test for Randomness of Spatial Distribution of Particles During Phase Transformations.	243-245A
Solid solubility	
Thermodynamics of the Massive Transformation. The Gamma Phase Boundary of CuBe Alloys.	411-419A 939-941A
Solid solutions, Diffusion	
Ternary Diffusion: Solutions With Diffusion Coefficients Linearly Dependent on Concentrations.	1359-1366A
Solidification	
See also Directional solidification	
Rapid solidification	
Numerical Models for Casting Solidification. I.—The Coupling of the Boundary Element and Finite Difference Methods for Solidification Problems.	91-99B
Numerical Models for Casting Solidification. II.—Application of the Boundary Element Method to Solidification Problems.	101-107B 163-172B 479-485B 681-684B
Convection in the Two-Phase Zone of Solidifying Alloys.	
The Movement of Particles in Liquid Metals Due to Gravity.	
Fluid Flow From a Low to a Higher Density Liquid.	
High-Temperature Phase Chemistries and Solidification Mode Prediction in Nitrogen-Strengthened Austenitic Stainless Steels.	
The Breakdown of Fibrous Structures in Directionally Grown Monotectic Alloys.	
Effects of Gravity on Interdendritic Flow: an Analytical Approach.	
Convection-Induced Distortion of a Solid/Liquid Interface.	
Morphological Stability in the Presence of Fluid Flow in the Melt.	
The Mechanisms of Formation and Prevention of Channel Segregation During Alloy Solidification.	2117-2124A 2163-2173A
Solidification, Deformation effects	
Compression of Semisolid Dendritic Sn—Pb Alloys at Low Strain Rates.	173-181B
Solidification, Environmental effects	
The Effects of Water Vapor on Solidification of Galvanized Coatings.	393-395B
Solubility	
See also Solid solubility	
Oxygen Solubility in Liquid Indium and Oxygen Diffusivity in Liquid Indium and Tin.	329-335B
Solubility Product for Niobium Carbide in Austenite.	541-544A
Solubility of Niobium Carbide and Niobium Carbonitride in Alloyed Austenite and Ferrite.	545-553A
Determination of Isothermal Sections of Nickel-Rich Portion of Ni—Cr—Mo System by Analytical Electron Microscopy.	783-792A
Solubility, Composition effects	
Interactions of Gases in Molten Salts: Carbon Dioxide and Oxygen in Cryolite Alumina Melts.	39-46B
Solubility, Cooling effects	
Precipitation Rapidly Solidified Al—Mn Alloys.	1987-1997A
Solubility, Deformation effects	
Surface Interactions in the Iron—Nitrogen System.	199-202A
Solution hardening	
See Solution strengthening	
Solution strengthening	
Tensile and Fatigue Behavior of Aluminum Oxide Fiber-Reinforced Magnesium Composites. II.—Alloying Effects.	1397-1405A
Solvus (metallurgical)	
See Solid solubility	
Sorption	
See Absorption (material)	
Adsorption	
Sour gas	
A Contribution to the Thermodynamics of High-Temperature Digeneite Cu _{2-y} S.	736-739B
Space environment	
Heat and Fluid Flow Phenomena in a Levitation Melted Sphere Under Zero Gravity.	183-186B
Spark erosion machining	
See Electric discharge machining	
Spark machining	
See Electric discharge machining	
Specimen preparation	
Calorimetric Studies of Al—Cu Alloys: Quench Sensitivity and Sample Preparation.	389-391A
Revealing Deformed and Recrystallized Structures in Beta Titanium Alloys.	1493-1496A
Speed	
See Velocity	
Spelter	
See Zinc	
Sphalerite, Reactions (chemical)	
Reaction Kinetics of the Ferric Chloride Leaching of Sphalerite—an Experimental Study.	5-12B
Spheroidal iron	
See Nodular iron	
Splat cooling	
The Microstructure and Tensile Properties of a Splat-Quenched Al—Cu—Li—Mg—Zr Alloy.	1367-1377A
Sponginess	
See Porosity	
Spraying	
See Plasma spraying	
Squeezing	
See Compressing	
Stability	
See also Phase stability	
Thermal stability	
Morphological Stability in the Presence of Fluid Flow in the Melt.	2117-2124A
Stainless steels	
See also Austenitic stainless steels	
Ferritic stainless steels	
Martensitic stainless steels	
Stainless steels, Welding	
Slag Metal Reactions During Submerged Arc Welding of Alloy Steels.	217-227A
Metal Vaporization From Weld Pools.	461-469B
Static fatigue	
See Creep rupture strength	
Statistical analysis	
Strain Hardening Behavior of Polycrystalline Iron and Low-Carbon Steels—a Statistical Analysis.	1185-1192A
Steel constituents	
See Austenite	
Ferrite	
Martensite	
Pearlite	
Steel converters	
See Bottom blown converters	
LD converters	
Steel making	
See Oxygen steel making	
Steels	
See also Aluminum killed steels	
Austenitic stainless steels	
Bearing steels	
Carbon steels	
Chromium molybdenum steels	
Chromium molybdenum vanadium steels	
Chromium steels	
Dual phase steels	
Electrical steels	
Ferritic stainless steels	
High speed tool steels	
High strength low alloy steels	
High strength steels	
Low alloy steels	
Martensitic stainless steels	
Nickel chromium molybdenum steels	
Nickel steels	
Precipitation hardening steels	
Rail steels	
Silicon steels	
Stainless steels	
Tool steels	
Steels, Casting	
The Formation of Oscillation Marks in the Continuous Casting of Steel Slabs.	493-509B

Steels

Structural Effects and Band Segregate Formation During the Electromagnetic Stirring of Strand-Cast Steel.	581-589B	Effect of Tempering on Quasistatic and Impact Fracture Toughness and Mechanical Properties for 5140 H Steel.	901-911A
Strain Induced Cracking in Partially Solidified Tin—Lead Alloy.	739-741B	Stress relieving See Grain refinement	
Steels, Crystal growth		Stress rupture strength See Creep rupture strength	
Numerical Models for Casting Solidification. II.—Application of the Boundary Element Method to Solidification Problems.	101-107B	Stress strain curves	
Fluid Flow From a Low to a Higher Density Liquid.	651-664B	The High-Temperature Low-Cycle Fatigue Behavior of the Nickel-Base Alloy IN-617.	661-670A
A Two-Dimensional Transient Model for Convection in Laser Melted Pool.	2175-2184A	Strain Hardening Behavior of Polycrystalline Iron and Low-Carbon Steels—a Statistical Analysis.	1185-1192A
Steels, Heat treatment		Stress strain curves, Heating effects	
Comparison of Numerical Modeling Techniques for Complex, Two-Dimensional, Transient Heat-Conduction Problems.	307-318B	Effect of Tempering on Quasistatic and Impact Fracture Toughness and Mechanical Properties for 5140 H Steel.	901-911A
Steels, Mechanical properties		Stress strain curves, Microstructural effects	
Localized Necking of Sheet at Negative Minor Strains.	323-329A	Biaxial Deformation of 70-30 Brass: Flow Behaviors, Texture, Microstructures.	1607-1612A
Steels, Refining		The Mechanical Properties of Grain-Refined Beta-CuAlNi Strain-Memory Alloys.	1613-1621A
Charge Transfer at Fe/FeO(CaF ₂) Electrodes at 1450°C: Exchange Current Density, Electrode Capacitance, Diffusivity.	281-288B	Interrelations of Cooling Rate, Microstructure and Mechanical Properties in Four HSLA Steels.	1807-1817A
Thermodynamics of Phosphate and Phosphide in CaO—CaF ₂ Melts.	351-356B	Stress strain curves, Temperature effects	
Fluid Flow and Mass Transfer in an Inductively Stirred Four-Ton Melt of Molten Steel: a Comparison of Measurements and Predictions.	633-640B	Elevated-Temperature Compressive Steady State Deformation and Failure in the Oxide Dispersion Strengthened Alloy MA 6000.	1753-1762A
Steels, Solubility		Stresses	
The Dissolution of Titanium in Liquid Steel.	47-58B	See Axial stress Residual stress Shear stress Stress intensity	
Steels, Welding		Stressing	
A New Finite Element Model for Welding Heat Sources.	299-305B	See Prestressing	
Step quenching		Stretch forming	
See Interrupted quenching		Punch-Stretching Behavior of a 2014 Aluminum Alloy in the Temperature Range 250 to 500°C.	923-929A
Sticking (adhesion)		Stretching	
See Adhesion		See Stretch forming	
Stirring		Strip	
See Electromagnetic stirring		See Strip steel	
Stora Kaldo process		Strip steel, Coating	
See Oxygen steel making		The Effects of Water Vapor on Solidification of Galvanized Coatings.	393-395B
Strain hardening		Strontium, Ternary systems	
Age Hardening in Cu—2.5%Ti.	931-937A	Constitution of the Lead—Tin—Strontium System Up to 36 Atomic Percent Strontium.	43-54A
Strain Hardening Behavior of Polycrystalline Iron and Low-Carbon Steels—a Statistical Analysis.	1185-1192A	Structural hardening	
Dislocation Substructure as a Function of Strain in a Dual-Phase Steel.	1221-1228A	See Aging (artificial) Precipitation hardening Strain hardening	
Strain hardening, Alloying effects		Structural steels	
Effects of Hydrogen on Mechanical Properties of Vanadium—Niobium Alloys.	147-153A	See Rail steels	
Strain rate		Structures (crystalline)	
Tensile Properties of a 2014 Aluminum Alloy in the Temperature Range 250 to 500°C.	913-922A	See Banded structure Crystal structure Dendritic structure Fibrous structure Gran structure Intergranular structure Lamellar structure Macrostructure Microstructure Substructures (crystalline) Widmanstatten structure	
Strain-Rate Sensitivity of Zinc Sheet.	1265-1271A	Subgrain boundaries	
The Influence of Deformation Path on the Slow Strain-Rate Stress Corrosion Cracking of Admiralty Brass Sheet.	1281-1286A	See Grain sub boundaries	
Strength of materials		Submerged arc welding	
See Mechanical properties		The Role of Alloy Composition on the Stability of Nitrides in Titanium-Microalloyed Steels During Weld Thermal Cycles.	33-41A
Strengthening (solution)		Slag Metal Reactions During Submerged Arc Welding of Alloy Steels.	217-227A
See Solution strengthening		A New Finite Element Model for Welding Heat Sources.	299-305B
Stress analysis		Submerged arc welds	
See X ray stress analysis		See Welded joints	
Stress concentration		Substructures (crystalline)	
Determination of Strain Distributions in Machined Chips.	1777-1779A	Dislocation Substructure as a Function of Strain in a Dual-Phase Steel.	1221-1228A
Stress corrosion cracking		On the Substructure of Athermal and Isothermal Martensites Formed in an Fe—2Ni—4Mn Alloy.	1555-1562A
Near-Threshold Corrosion Fatigue Crack Growth Behavior of Type 422 Stainless Steel at Controlled Maximum Stress Intensities.	693-699A	Suction	
The Influence of Deformation Path on the Slow Strain-Rate Stress Corrosion Cracking of Admiralty Brass Sheet.	1281-1286A	See Vacuum	
Stress-Corrosion Cracking of Copper Single Crystals.	1941-1946A	Sulfates, Environment	
Investigation of Stress Corrosion Cracking of Cast and Forge Steel in Water.	2087-2092A	The Influence of Deformation Path on the Slow Strain-Rate Stress Corrosion Cracking of Admiralty Brass Sheet.	1281-1286A
Stress corrosion cracking, Microstructural effects		Sulfates, Reduction (chemical)	
Effect of Retrogression and Reaging Treatments on the Microstructure of Al-7075-T651.	1531-1543A	The Precipitation of Ni ₃ S ₂ From Sulfate Solutions.	609-615B
Stress corrosion resistance		Sulfidation (corrosion)	
See Corrosion resistance		See Sulfurization	
Stress cracking		Sulfides, Crystal growth	
Grain Boundary Composition and Associated Hydrogen Cracking of Modified 4130 Steels.	565-572A	See also Hydrogen sulfide	
Stress distribution		The Precipitation of Ni ₃ S ₂ From Sulfate Solutions.	609-615B
See Stress concentration			
Stress intensity			
Fatigue in Binary Alloys of B.C.C. Iron.	679-691A		
Near-Threshold Corrosion Fatigue Crack Growth Behavior of Type 422 Stainless Steel at Controlled Maximum Stress Intensities.	693-699A		
Crack Paths and Hydrogen-Assisted Crack Growth Response in AISI 4340 Steel.	735-746A		
Critical Stress Intensity for Off-Axis Fracture of Al ₂ O ₃ Fiber-Reinforced Magnesium.	756-760A		
Fatigue Threshold Studies in Iron, Fe—Si and HSLA Steel. I.—Effect of Strength and Surface Asperities on Closure.	875-888A		
Fatigue Threshold Studies in Iron, Fe—Si and HSLA Steel. II.—Thermally Activated Behavior of the Effective Stress Intensity at Threshold.	889-900A		

		Temperature field
Sulfides, Diffusion		
Activity of SnS in Copper-Saturated Matte.	595-598B	
Sulfides, Microstructure		
Effect of Shape of Sulfide Inclusions on Anisotropy of Inclusion Spacings and on Directionality of Ductility in Hot Rolled C—Mn Steels.	1259-1264A	
Sulfides, Oxidation		
Oxidation of Nickel Sulfide.	127-133B	
Thermodynamics of the Oxidation of Rare Earth Oxsulfides at High Temperatures.	523-528B	
Sulfides, Reduction (chemical)		
Cell Measurements of the Reduction Potentials of Gas-Phase Emanating From PbS/CaO/C at Elevated Temperatures.	19-22B	
Relationships Between the Pourbaix Diagram for Ag—S—H ₂ O and Electrochemical Oxidation and Reduction of Ag ₂ S.	235-242B	
Electrodiissolution of Lead Sulfide in Different Acidic Media. Hydrogen Reduction Kinetics of Nickel Sulfide in the Presence of Calcium Oxide.	605-608B	
Sulfides, Reduction (electrolytic)		
New Hydrometallurgical Process for Obtaining Mercury From Cinnabar Ore.	719-723B	
Sulfides, Sorption		
Distribution of Lead Between Copper and Matte and the Activity of PbS in Copper-Saturated Mattes.	229-233B	
Sulfur, Diffusion		
Reduction of Silica in Coke With Ash of Increased Basicity. Measurement and Analysis of Distribution Coefficients in Fe—Ni Alloys Containing Sulfur and/or Phosphorus. I.—K _{H₂} and K _{P₂}	441-449B	
Sulfur, Recovering		
Recovery of Elemental Sulfur During the Oxidative Ammoniacal Leaching of Chalcopyrite.	726-729B	
Sulfur compounds		
See also Hydrogen sulfide		
Sulfur compounds, Reactions (chemical)		
A Contribution to the Thermodynamics of High-Temperature Digenite Cu _{2-x} —S.	736-739B	
Sulfuric acid leaching		
Control of Autoclave Scaling During Acid Pressure Leaching of Nickeliferous Laterite Ore.	433-440B	
The Precipitation of Ni ₃ S ₂ From Sulfate Solutions.	609-615B	
Sulfurization		
The Sulfidation Attack of a Nickel-Base Alloy at Intermediate Temperatures.	5-10A	
Behavior of Fe—Ni—Cr Alloys in a Complex Multioxidant Environment Under Conditions of Dynamic Straining.	11-22A	
Sulphur		
See Sulfur		
Superalloys, Brazing		
Structure of Vacuum Brazed BNi-5 Joint of Inconel 718.	609-620A	
Superalloys, Mechanical properties		
The Sulfidation Attack of a Nickel-Base Alloy at Intermediate Temperatures.	5-10A	
Behavior of Fe—Ni—Cr Alloys in a Complex Multioxidant Environment Under Conditions of Dynamic Straining.	11-22A	
The Effects of a Liquid Sulfate/Chloride Environment on Superalloy Stress Rupture Properties at 704°C.	23-28A	
The Effect of Protective Coatings on the High-Temperature Properties of a Gamma Prime-Strengthened Nickel-Base Superalloy.	229-236A	
Effect of Environment on Creep Crack Growth in PM/HIP René-95.	381-388A	
Fatigue Crack Growth Behavior of an Oxide Dispersion-Strengthened MA 956 Alloy.	527-539A	
The High-Temperature Low-Cycle Fatigue Behavior of the Nickel-Base Alloy IN-617.	661-670A	
Prior Deformation Effects on Creep and Fracture in Inconel Alloy X-750.	1437-1441A	
Crack Growth in a Single-Crystal Superalloy at Elevated Temperature.	1711-1719A	
Elevated-Temperature Compressive Steady State Deformation and Failure in the Oxide Dispersion Strengthened Alloy MA 6000E.	1753-1762A	
Tensile Behavior of Inconel Alloy X-750 in Air and Vacuum at Elevated Temperatures.	1763-1767A	
Effect of Oxidation Kinetics on the Near Threshold Fatigue Crack Growth Behavior of a Nickel-Base Superalloy.	1769-1775A	
Superalloys, Melting		
Observations of Melt Rate as a Function of Arc Power, CO ₂ Pressure and Electrode Gap During Vacuum Consumable Arc Remelting of Inconel 718.	117-125B	
Superalloys, Metal working		
Flow and Fracture of a Multiphase Alloy MP35N for Study of Workability.	1837-1847A	
Superalloys, Powder technology		
The Fracture Behavior of Tungsten Wire-Reinforced Superalloy Composites During Isothermal Forging.	501-510A	
Carbide Composition Change During Liquid Phase Sintering of a Wear Resistant Alloy.	1099-1102A	
Superalloys, Structural hardening		
Precipitation of Beta Phase in the Gamma Prime Particles of Nickel-Base Superalloy.	1331-1334A	
Supercooling		
Solidification of Highly Undercooled Sn—Pb Alloy Droplets.	1303-1310A	
Superheating		
A Quantitative Assessment of the Hardenability Increase Resulting From a Superhardenability Treatment.	2185-2191A	
Superlattices		
Electron Microscopy Studies of Charge Density Wave (CDW) Transitions in a Ti _{58.7} Ni _{37.5} Al _{3.8} Alloy.	1155-1163A	
Superplasticity		
Effect of Cavitation on Post-Deformation Tensile Properties of a Superplastic Copper-Base Alloy.	1443-1450A	
Supersonic nozzles		
See Nozzles		
Surface alloying		
Metastable Alloys of Beryllium Prepared by Ion Implantation.	1787-1805A	
Surface chemistry		
An Electron Microscope Study of the Featureless Zone Obtained During Rapid Solidification.	29-31A	
Surface defects, Composition effects		
The Formation of Oscillation Marks in the Continuous Casting of Steel Slabs.	493-509B	
Surface diffusion		
See Diffusion		
Surface energy		
A Numerical Finite Difference Model of Steady State Cellular and Dendritic Growth.	983-994A	
The Solidification of Monotectic Alloys—Microstructures and Phase Spacings.	1003-1012A	
Further Considerations on the Thermodynamics of the Proeutectoid Ferrite Reaction in Fe—C Alloys.	1287-1288A	
Surface finishing		
See also Descaling		
Surface Interactions in the Iron—Nitrogen System.	199-202A	
Surface hardening		
See Carburizing		
Laser beam hardening		
Nitriding		
Surface layer, Chemical analysis		
An Electron Microscope Study of the Featureless Zone Obtained During Rapid Solidification.	29-31A	
Surface properties		
See Surface structure		
Surface temperature		
Surface structure		
Surface Interactions in the Iron—Nitrogen System.	199-202A	
Surface Relief Produced by Diffusion-Induced Boundary Migration in Cu—Zn.	495-499A	
Laser Processing of Cast Iron for Enhanced Erosion Resistance.	719-728A	
Fatigue Behavior of Carburized Steel With Internal Oxides and Nonmartensitic Microstructure Near the Surface.	1431-1436A	
Dislocation-Depth Distribution in High-Temperature Creep.	1571-1577A	
Surface structure, Heating effects		
Resistometric Study of Fe—V and Fe—Mo Nitrided by Constant Activity Aging.	1545-1554A	
Surface temperature		
Forced Velocity Pearlite in High-Purity Fe—C Alloys. I.—Experimental.	1037-1045A	
Surgical implants, Materials selection		
Microstructural Changes During Isothermal Forging of a Co—Cr—Mo Alloy.	339-345A	
Synthetic coke		
See Coke		
Systems (metallurgical)		
See Binary systems		
Quaternary systems		
Ternary systems		
Tanks (electrolytic)		
See Electrolytic cells		
Tantalum, Alloying additive		
Effect of Tantalum Additions Upon <i>In Situ</i> Prepared Nb ₃ Sn—Cu Superconducting Wire.	283-286A	
Tapes (metallic), Casting		
Ribbon—Substrate Adhesion Dynamics in Chilli Block Melt-Spinning Processes.	155-161B	
Temper brittleness		
Discussion of "The Effect of Heat Treatments on the Corrosion Fatigue Properties of 13% Chromium Stainless Steel in 3% NaCl Aqueous Solution" (and Authors' Reply).	250-251A	
Temper brittleness, Microstructural effects		
Consideration on the Intergranular Tempered Martensite Embrittlement.	393-395A	
Temperature		
See Critical temperature		
Surface temperature		
Temperature distribution		
Temperature distribution		
Heat Transfer and Fluid Flow in Plasma Spraying.	59-70B	
Temperature distribution, Environmental effects		
Heat and Fluid Flow Phenomena in a Levitation Melted Sphere Under Zero Gravity.	183-186B	
Temperature field		
See Temperature distribution		

Tempering

Tempering	
Temper-Aging of Continuously Annealed Low-Carbon Dual-Phase Steel.	73-86A
Discussion of "The Effect of Heat Treatments on the Corrosion Fatigue Properties of 13% Chromium Stainless Steel in 3% NaCl Aqueous Solution" (and Authors' Reply).	250-251A
Effect of Tempering on Quasistatic and Impact Fracture Toughness and Mechanical Properties for 5140 H Steel.	901-911A
Microstructure—Strength Relations in a Hardenable Stainless Steel With 16% Chromium, 1.5% Molybdenum and 5% Nickel.	1379-1387A
Effect of Tempering on the Carbon Activity and Hydrogen Attack Kinetics of 2.25Cr—1Mo Steel.	2021-2027A
The Role of the Constituent Phases in Determining the Low Temperature Toughness of 5.5Ni Cryogenic Steel.	2213-2219A
Tensacity	
See Tensile strength	
Tensile modulus	
See Modulus of elasticity	
Tensile properties	
See also Elongation	
Tensile strength	
Yield strength	
Fatigue in Binary Alloys of B.C.C. Iron.	679-691A
The Microstructure and Tensile Properties of a Splat-Quenched Al—Cu—Li—Mg—Zr Alloy.	1367-1377A
Embrittlement of Types 316L and 347 Weld Overlay by Post-Weld Heat Treatment and Hydrogen.	1475-1484A
Influence of Nitrogen Alloying on Hydrogen Embrittlement in AISI 303 Type Stainless Steels.	2205-2211A
Tensile properties, Alloying effects	
The Effect of Minor Alloying Elements on the Mechanical Properties of Al—Cu—Li Alloys.	1209-1220A
Tensile and Fatigue Behavior of Aluminum Oxide Fiber-Reinforced Magnesium Composites. II.—Alloying Effects.	1397-1405A
Tensile properties, Deformation effects	
The Effect of Hot Working on Structure and Strength of a Precipitation Strengthened Austenitic Stainless Steel.	347-368A
Effects of Prior Cold Rolling and Post-Temper Rolling on the Properties of Continuously Annealed Low-Carbon Dual-Phase Steel.	671-678A
Tensile properties, Environmental effects	
Tensile Behavior of Inconel Alloy X-750 in Air and Vacuum at Elevated Temperatures.	1763-1767A
Tensile properties, Heating effects	
Temper-Aging of Continuously Annealed Low-Carbon Dual-Phase Steel.	73-86A
Microstructure—Strength Relations in a Hardenable Stainless Steel With 16% Chromium, 1.5% Molybdenum and 5% Nickel.	1379-1387A
Tensile properties, Microstructural effects	
Sintering Atmosphere Effects on the Ductility of W—Ni—Fe Heavy Metals.	747-754A
Tensile and Fatigue Behavior of Aluminum Oxide Fiber-Reinforced Magnesium Composites. I.—Fiber Fraction and Orientation.	1389-1396A
Effect of Cavitation on Post-Deformation Tensile Properties of a Superplastic Copper-Base Alloy.	1443-1450A
Structure and Properties of Rapidly Solidified Dispersion-Strengthened Titanium Alloys. II.—Tensile and Creep Properties.	1465-1474A
Influence of Texture on Fatigue Properties of Ti—6Al—4V. A Microstructural Investigation of the Origin of Brittle Behavior in the Transverse Direction in Molybdenum-Based Alloy Bars.	1597-1605A
Interrelations of Cooling Rate, Microstructure and Mechanical Properties in Four HSLA Steels.	1741-1752A
The Effect of Microstructure on the Deformation Modes and Mechanical Properties of Ti—6Al—2Nb—0.8Mo. II.—Equiaxed Structures.	1807-1817A
Deformation and Fracture Behavior of Ni/Mo/Al (Gamma/Gamma Prime-Alpha) <i>In Situ</i> Composite.	1873-1881A
Cooling Rate Effects in Ti—6Al—2Sn—4Zr—2Mo Weldments.	1905-1919A
Tensile Rate Effects in Ti—6Al—2Sn—4Zr—2Mo Weldments.	1948-1952A
Tensile properties, Size effects	
Tensile Strength of Ni/Cu/(001)Ni Triple Layer Films.	1273-1280A
Tensile properties, Temperature effects	
Tensile Properties of a 2014 Aluminum Alloy in the Temperature Range 250 to 500°C.	913-922A
Elevated-Temperature Compressive Steady State Deformation and Failure in the Oxide Dispersion Strengthened Alloy MA 6000E.	1753-1762A
Tensile strength	
Enhanced Tensile Strength for Electrodeposited Nickel/Copper Multilayer Composites.	2039-2040A
Tensile strength, Heating effects	
Low-Temperature Improvement of the Mechanical Properties of 4340-Type Ultra-High-Strength Steel With Heat Treating Techniques Using Interrupted Quenching Method.	2247-2249A
Tensile strength, Microstructural effects	
The Mechanical Properties of Grain-Refined Beta-CuAlNi Strain-Memory Alloys.	1613-1621A
Tensile tests	
See Tension tests	
Tensile yield strength	
See Yield strength	
Tension tests	
Strain-Rate Sensitivity of Zinc Sheet.	1265-1271A
Ternary systems, Diffusion	
Zero-Flux Planes and Flux Reversals in the Cu—Ni—Zn System at 775°C.	649-659A
Ternary Diffusion: Solutions With Diffusion Coefficients Linearly Dependent on Concentrations.	1359-1366A
Ternary systems, Phases (state of matter)	
Constitution of the Lead—Tin—Strontium System Up to 36 Atomic Percent Strontium.	43-54A
The Grain Refining of Aluminum and Phase Relationships in the Al—Ti—B System.	277-282A
Phase Relationships in the System Fe—Na—O.	319-327B
Nickel—Aluminum—Molybdenum Phase Equilibria.	481-486A
Thermodynamic Properties of Liquid Mg—In—Cd Ternary Solutions.	543-546B
The Liquidus Surface for the Al—Li—Si System From 0.20% Lithium and 0.20% Silicon.	595-597A
Phase Relationships in the Fe—Cr—C System at Solidification Temperatures.	663-676B
Determination of Isothermal Sections of Nickel-Rich Portion of Ni—Cr—Mo System by Analytical Electron Microscopy. Crystallization Studies in the Aluminum-Rich Corner of the Aluminum—Iron—Manganese System.	783-792A
Miscibility Gap in Fe—Ni—Al and Fe—Ni—Al—Co Systems.	1311-1317A
	1819-1828A
Testing equipment, Automation	
A Study of Creep Crack Growth in 2219-T851 Aluminum Alloy Using a Computerized Testing System.	107-120A
Texture	
Biaxial Deformation of 70-30 Brass: Flow Behaviors, Texture, Microstructures.	1607-1612A
Texture, Alloying effects	
Effect of Antimony on Recrystallization Behavior and Magnetic Properties of a Nonoriented Silicon Steel.	257-260A
Thermal analysis	
Modification in the Aluminum—Silicon System.	459-469A
Thermal EMF	
See Thermoelectricity	
Thermal expansion, Cooling effects	
Isothermal Martensitic Transformation in Fe—Ni and Fe—Ni—C Alloys at Subzero Temperatures.	2193-2203A
Thermal flux	
See Heat transmission	
Thermal power	
See Thermoelectricity	
Thermal properties	
See Heat of formation	
Heat of mixing	
Heat of solution	
Thermal expansion	
Thermal stability	
Thermoelectricity	
Thermal stability	
Rapid Solidification of a Droplet-Processed Stainless Steel.	819-833A
Thermoanalysis	
See Thermal analysis	
Thermochemistry	
Thermochemistry of Binary Liquid Gold Alloys: the Systems Au—Ni, Au—Co, Au—Fe and Au—Mn.	573-580B
Thermodynamics	
The Determination of the Thermodynamics of the NaF—AlF ₃ —Al ₂ O ₃ System With a Solid Electrolyte Cell.	135-139B
Thermodynamics of the Massive Transformation.	411-419A
Distribution of Lead Between Copper and Matte and the Activity of PbS in Copper-Saturated Mattes.	441-449B
High-Temperature Thermodynamic Properties of the Chromium Carbides Cr ₃ C ₂ and Cr ₃ C ₂ Determined Using a Galvanic Cell Technique.	517-521B
Thermodynamics of the Oxidation of Rare Earth Oxsulfides at High Temperatures.	523-528B
Thermodynamic Properties of Liquid Mg—In—Cd Ternary Solutions.	543-546B
On the Relationship Between Interaction Coefficients.	677-680B
A Contribution to the Thermodynamics of High-Temperature Digenite Cu ₂ —S.	736-739B
Ostwald Ripening and Relaxation in Dendritic Structures.	995-1001A
Further Considerations on the Thermodynamics of the Proeutectoid Ferrite Reaction in Fe—C Alloys.	1287-1288A
Hydrogen Attack in an Austenitic Stainless Steel.	1485-1490A
Thermodynamics of Several Lewis-Acid-Base Stabilized Transition Metal Alloys.	2075-2085A
Thermoplastic properties	
See Internal friction	
Shape memory	
Thermoelectric effect	
See Thermoelectricity	
Thermoelectric EMF	
See Thermoelectricity	
Thermoelectricity	
Thermoelectric and Morphological Effects of Peltier Pulsing on Directional Solidification of Eutectic Bi/Mn.	2147-2154A
Thermomechanical treatment	
See Controlled rolling	
Thermostability	
See Thermal stability	
Thickness	
Tensile Strength of Ni/Cu/(001)Ni Triple Layer Films.	1273-1280A

Thin films, Diffusion	
The Driving Force for Chemically Induced Migration of Molten Nickel Films Between Tungsten Grains.	1503-1505A
Thin films, Directional solidification	
Interlamellar Spacing in Directionally Solidified Eutectic Thin Films.	1013-1017A
Tig arc welding	
See Gas tungsten arc welding	
Tilting furnaces	
See Bottom blown converters	
Copper converters	
LD converters	
Time quenching	
See Interrupted quenching	
Tin, Alloying elements	
The Mechanisms of Formation and Prevention of Channel Segregation During Alloy Solidification.	2163-2173A
Tin, Coatings	
The Effect of a Tin Barrier on the Permeability of Hydrogen Through Mild Steel and Ferritic Stainless Steel.	2093-2095A
Tin, Crystal growth	
The Movement of Particles in Liquid Metals Due to Gravity.	479-485B
Tin, Dopants	
Effects of the Additions of Boron, Phosphorus, Tin and Antimony on Oxygen-Assisted Hydrogen Embrittlement of Nickel.	519-526A
Tin, Solubility	
Oxygen Solubility in Liquid Indium and Oxygen Diffusivity in Liquid Indium and Tin.	329-335B
Tin, Ternary systems	
Constitution of the Lead—Tin—Strontium System Up to 36 Atomic Percent Strontium.	43-54A
Tin base alloys, Crystal growth	
Convection in the Two-Phase Zone of Solidifying Alloys.	163-172B
Solidification of Highly Undercooled Sn—Pb Alloy Droplets.	1303-1310A
Tin base alloys, Metal working	
Compression of Semisolid Dendritic Sn—Pb Alloys at Low Strain Rates.	173-181B
Tin compounds, Composite materials	
Effect of Tantalum Additions Upon <i>In Situ</i> Prepared Nb ₃ Sn—Cu Superconducting Wire.	283-286A
Tin compounds, Diffusion	
Activity of SnS in Copper-Saturated Matte.	595-598B
Titanium, Acoustic properties	
Determination of the Sources of Acoustic Emission Generated During the Deformation of Titanium.	1849-1853A
Titanium, Alloying elements	
Grain Refinement of Niobium Steels by Control of Recrystallization During Hot Rolling.	87-98A
Microstructural Changes Produced in a Multifilamentary Nb/Ti Composite by Cold Work and Heat Treatment.	843-852A
Titanium, Dopants	
Metastable Alloys of Beryllium Prepared by Ion Implantation.	1787-1805A
Titanium, Machining	
Formation of Metal Carbide Powder by Spark Machining of Reactive Metals.	1117-1127A
Titanium, Solubility	
The Dissolution of Titanium in Liquid Steel.	47-58B
Titanium, Ternary systems	
The Grain Refining of Aluminum and Phase Relationships in the Al—Ti—B System.	277-282A
Titanium base alloys, Composite materials	
Environmentally Influenced Mixed Mode Fatigue Crack Propagation of Titanium Metal/Matrix Composites.	209-215A
Titanium base alloys, Machining	
Determination of Strain Distributions in Machined Chips.	1777-1779A
Titanium base alloys, Mechanical properties	
The Role of Alpha and Beta Phases in Fatigue Crack Propagation of Ti—Mn Alloys.	155-171A
Effect of Microstructure, Strength and Oxygen Content on Fatigue Crack Growth Rate of Ti—4.5Al—5.0Mo—1.5Cr (CORONA 5).	183-197A
Localized Necking of Sheet at Negative Minor Strains.	323-329A
The Effect of Overload on the Fatigue Crack Propagation in Metastable Beta Ti—V Alloys.	511-517A
The Effect of Microstructure on the Deformation Modes and Mechanical Properties of Ti—6Al—2Nb—1Ta—0.8Mo. I.—Widmanstätten Structures.	1229-1245A
Segregation and Influence of Boron on the Impact Toughness of Ti—6Al—2Nb—1Ta—0.8Mo Welds and Castings.	1505-1507A
Influence of Texture on Fatigue Properties of Ti—6Al—4V.	1597-1605A
The Effect of Microstructure and Deformation Behavior on the Hot Ductility of Ti—6Al—2Nb—1Ta—0.8Mo.	1687-1698A
The Effect of Microstructure on the Deformation Modes and Mechanical Properties of Ti—6Al—2Nb—0.8Mo. II.—Equiaxed Structures.	1873-1881A
Fatigue Crack Growth Mechanics for Ti—6Al—4V (RA) in Vacuum and Humid Air.	1931-1940A
The Influence of Hydrogen and the Interface Phase on Fracture in Ti Code 12.	1955-1958A
Yield Loci of HY80, HY100 Steels and Ti—6Al—2Nb—1Ta—0.8Mo.	2097-2101A
The Wear Behavior of Nitrogen-Implanted Metals.	2221-2229A
Titanium base alloys, Metal working	
Modeling of Dynamic Material Behavior in Hot Deformation: Forging of Ti-6242.	1883-1892A
Titanium base alloys, Metallography	
Revealing Deformed and Recrystallized Structures in Beta Titanium Alloys.	1493-1496A
Titanium base alloys, Phase transformations	
Electron Microscopy Studies of Charge Density Wave (CDW) Transitions in a Ti ₅₈ (Ni ₃₇ Al ₃) ₃ Alloy.	1155-1163A
Titanium base alloys, Powder technology	
Rapidly Solidified Prealloyed Powders by Laser Spin Atomization.	149-153B
On the Effect of NaCl on Porosity in Elemental-Blend Powder Metallurgy Ti—5Al—2.5Sn.	248-249A
Structure and Properties of Rapidly Solidified Dispersion-Strengthened Titanium Alloys. I.—Characterization of Dispersoid Distribution, Structure and Chemistry.	1451-1463A
Structure and Properties of Rapidly Solidified Dispersion-Strengthened Titanium Alloys. II.—Tensile and Creep Properties.	1465-1474A
Titanium base alloys, Sorption	
Hydride Precipitation and Dislocation Substructures in Ti—5Al—2.5Sn.	813-817A
Titanium base alloys, Welding	
Microstructure and Mechanical Properties of a Welded (Alpha + Beta) Titanium Alloy.	1589-1596A
Cooling Rate Effects in Ti—6Al—2Sn—4Zr—2Mo Weldments.	1948-1952A
Titanium compounds	
See also Titanium dioxide	
Titanium compounds, Mechanical properties	
Deformation in Ti ₃ Al Fatigued at Room and Elevated Temperatures.	1721-1729A
Titanium dioxide, Coatings	
Prevention of Hydrogen Embrittlement by a TiO ₂ Surface Layer.	597-600A
Titanium ores	
See ilmenite	
Tool life, Heating effects	
Microstructure and Its Effect on Toughness and Wear Resistance of Laser Surface Melted and Post-Heat Treated High-Speed Steel.	1829-1835A
Tool steels	
See also High speed steel tools	
High speed tool steels	
Tool steels, Mechanical properties	
Hot Workability of Three Grades of Tool Steels.	1855-1864A
Tools	
See High speed steel tools	
High speed tool steels	
Top blown converters	
See LD converters	
Toughness	
See also Fracture toughness	
Toughness, Cooling effects	
Toughness Variation With Test Temperature and Cooling Rate for Liquid Phase Sintered W—3.5Ni—1.5Fe.	121-128A
Toughness, Microstructural effects	
The Role of the Constituent Phases in Determining the Low Temperature Toughness of 5.5Ni Cryogenic Steel.	2213-2219A
Transferring	
See Heat transfer	
Mass transfer	
Transformations (materials)	
See Martensitic transformations	
Massive type transformations	
Phase transformations	
Transformer steels	
See Electrical steels	
Transition metal alloys	
See also Cobalt base alloys	
Ferrous alloys	
Molybdenum base alloys	
Nickel base alloys	
Niobium base alloys	
Titanium base alloys	
Tungsten base alloys	
Vanadium base alloys	
Transition metal alloys, Atomic properties	
Thermodynamics of Several Lewis-Acid-Base Stabilized Transition Metal Alloys.	2075-2085A
Transition metal compounds	
See Chromium carbide	
Cobalt compounds	
Iron compounds	
Iron oxides	
Nickel compounds	
Niobium carbide	
Niobium compounds	
Titanium compounds	
Titanium dioxide	
Vanadium compounds	

Transition metals

Transition metals	
See also Chromium	
Cobalt	
Iron	
Manganese	
Molybdenum	
Nickel	
Niobium	
Tantalum	
Titanium	
Tungsten	
Vanadium	
Zirconium	
Transition metals, Alloying elements	
The Influence of Alloying Elements on Impurity-Induced Grain Boundary Embrittlement.	1415-1430A
Transition metals, Thermal properties	
Thermochemistry of Alloys of Transition Metals. IV.—Alloys of Copper With Scandium, Yttrium, Lanthanum and Lutetium.	357-368B
Transmission	
See Conduction	
Heat transmission	
Triaxial stress	
See Axial stress	
Tubular goods	
See Pipe	
Tungsten, Composite materials	
The Fracture Behavior of Tungsten Wire-Reinforced Superalloy Composites During Isothermal Forging.	501-510A
Tungsten, Machining	
Formation of Metal Carbide Powder by Spark Machining of Reactive Metals.	1117-1127A
Tungsten, Mechanical properties	
Dependence of Dynamic Fracture Resistance on Crack Velocity in Tungsten. I.—Single Crystals.	1247-1251A
Dependence of Dynamic Fracture Resistance on Crack Velocity in Tungsten. II.—Bicrystals and Polycrystals.	1253-1258A
Direct Measurement of the Work of Fracture for Grain Boundaries of Twist Misorientation About (100) in Tungsten.	1289-1292A
Tungsten, Powder technology	
The Driving Force for Chemically Induced Migration of Molten Nickel Films Between Tungsten Grains.	1503-1505A
Tungsten arc welding	
See Gas tungsten arc welding	
Tungsten base alloys, Powder technology	
Toughness Variation With Test Temperature and Cooling Rate for Liquid Phase Sintered W—3.5Ni—1.5Fe.	121-128A
Fracture Behavior of W—Ni—Fe Heavy Alloys.	331-338A
Sintering Atmosphere Effects on the Ductility of W—Ni—Fe Heavy Metals.	747-754A
Interphase Boundary Precipitation in Liquid Phase Sintered W—Ni—Fe and W—Ni—Cu Alloys.	1089-1098A
Turbine blades, Heat treatment	
Discussion of "The Effect of Heat Treatments on the Corrosion Fatigue Properties of 13% Chromium Stainless Steel in 3% NaCl Aqueous Solution" (and Authors' Reply).	250-251A
Turbine blades, Mechanical properties	
The Effect of Protective Coatings on the High-Temperature Properties of a Gamma Prime-Strengthened Nickel-Based Superalloy.	229-236A
Tuyeres	
Mixing of Concentric Gas Jets Issuing Vertically Into a Liquid. High-Pressure Injection of Air Into a Peirce-Smith Copper Converter.	71-75B
Tuyeres, Corrosion	
Injection Phenomena in Nonferrous Processes.	243-250B
Twining	
Nucleation of Recrystallization in a Co—Cr—Mo Alloy.	1335-1338A
Ultimate tensile strength	
See Tensile strength	
Undercooling	
See Supercooling	
Uranium base alloys, Microstructure	
The Effect of Quench Rate on the Microstructure, Mechanical Properties and Corrosion Behavior of U—6 Wt.% Nb.	1319-1330A
Vacuum	
The Effect of Microstructure and Environment on Fatigue Crack Closure of 7475 Aluminum Alloy.	555-563A
The Influence of Gas Atmospheres on the First-Stage Sintering of High-Purity Niobium Powders.	1111-1116A
Vacuum arc melting	
Observations of Melt Rate as a Function of Arc Power, CO Pressure and Electrode Gap During Vacuum Consumable Arc Remelting of Inconel 718.	117-125B
Vacuum brazing	
Structure of Vacuum Brazed BN-5 Joint of Inconel 718.	609-620A
Vacuum melting	
See Vacuum arc melting	
Vacuum refining	
Vacuum Refining Copper Melts to Remove Bismuth, Arsenic and Antimony.	251-257B
Vanadium, Alloying elements	
The Effect of Overload on the Fatigue Crack Propagation in Metastable Beta Ti—V Alloys.	511-517A
Vanadium base alloys, Mechanical properties	
Effects of Hydrogen on Mechanical Properties of Vanadium—Niobium Alloys.	147-153A
Vanadium compounds, Mechanical properties	
The Fracture of Ordered (Fe, Co) ₃ V.	701-706A
Vanadium steels	
See Chromium molybdenum vanadium steels	
Vaporizing	
Metal Vaporization From Weld Pools.	461-469B
Alloying Element Vaporization and Weld Pool Temperature During Laser Welding of AISI 202 Stainless Steel.	641-644B
Vapors	
See Water vapor	
Veining (structure)	
See Preferred orientation	
Velocity	
Forced Velocity Pearlite in High-Purity Fe—C Alloys. II.—Theoretical.	1047-1054A
Dependence of Dynamic Fracture Resistance on Crack Velocity in Tungsten. I.—Single Crystals.	1247-1251A
Dependence of Dynamic Fracture Resistance on Crack Velocity in Tungsten. II.—Bicrystals and Polycrystals.	1253-1258A
Volatilizing	
See Vaporizing	
Water	
See also Salt water	
Water, Environment	
Investigation of Stress Corrosion Cracking of Cast and Forged Steel in Water.	2087-2092A
Water vapor	
The Effects of Water Vapor on Solidification of Galvanized Coatings.	393-395B
Water vapor, Environment	
Environmentally Influenced Mixed Mode Fatigue Crack Propagation of Titanium Metal/Matrix Composites.	209-215A
Mechanisms of Slow Fatigue Crack Growth in High-Strength Aluminum Alloys. Role of Microstructure and Environment.	369-379A
Wear	
See Hot gas corrosion	
Wear resistance	
Carbide Composition Change During Liquid Phase Sintering of a Wear Resistant Alloy.	1099-1102A
Wear resistance, Alloying effects	
The Wear Behavior of Nitrogen-Implanted Metals.	2221-2229A
Wear resistance, Heating effects	
Microstructure and Its Effect on Toughness and Wear Resistance of Laser Surface Melted and Post-Heat Treated High-Speed Steel.	1829-1835A
Weld deposited coatings, Mechanical properties	
Embrittlement of Types 316L and 347 Weld Overlay by Post-Weld Heat Treatment and Hydrogen.	1475-1484A
Weld metal	
Metal Vaporization From Weld Pools.	461-469B
Weld metal, Crystal growth	
A Two-Dimensional Transient Model for Convection in Laser Melted Pool.	2175-2184A
Weld metal, Reactions (chemical)	
Slag Metal Reactions During Submerged Arc Welding of Alloy Steels.	217-227A
Welded joints, Microstructure	
Microstructure and Mechanical Properties of a Welded (Alpha + Beta) Titanium Alloy.	1589-1596A
Cooling Rate Effects in Ti—6Al—2Sn—4Zr—2Mo Weldments.	1948-1952A
Welding	
See Electron beam welding	
Electroslag welding	
Gas tungsten arc welding	
Laser beam welding	
Submerged arc welding	
Welds	
See Welded joints	
Whiskers (metals), Composite materials	
Creep Rupture of a Silicon Carbide Reinforced Aluminum Composite.	139-146A
Whiskers (metals), Crystal growth	
Whisker Growth in Reduction of Oxides.	685-694B
Widmanstätten structure	
The Effect of Microstructure on the Deformation Modes and Mechanical Properties of Ti—6Al—2Nb—1Ta—0.8Mo. I.—Widmanstätten Structures.	1229-1245A
Grain Boundary Widmanstätten Ferrite Spacings in 0.2% Carbon Steel.	1643-1651A
The Effect of Microstructure and Deformation Behavior on the Hot Ductility of Ti—6Al—2Nb—1Ta—0.8Mo.	1687-1698A
The Effect of Microstructure on the Deformation Modes and Mechanical Properties of Ti—6Al—2Nb—0.8Mo. II.—Equiaxed Structures.	1873-1881A

Wire, Superconductivity	
Effect of Tantalum Additions Upon <i>In Situ</i> Prepared Nb ₃ N—Cu Superconducting Wire.	283-286A
Wire bar	
See Billets	
Wolfram	
See Tungsten	
Work hardening	
See Strain hardening	
Work strengthening	
See Strain hardening	
Workability	
See Formability	
Hot workability	
Wustite, Crystal growth	
High-Temperature Oxidation of Iron at 1200°C in a Hot Stage Environmental Scanning Electron Microscope.	2231-2240A
Crystallographic and Morphological Characteristics of Oxidation Growth Pits in Wustite Grown at 1200°C.	2241-2246A
Wustite, Reduction (chemical)	
Hydrogen Reduction of Wustite Single Crystals Doped With Magnesium, Manganese, Calcium, Aluminum and Silicon.	383-391B
The Breakdown of Dense Iron Layers on Wustite in CO/CO ₂ and H ₂ /H ₂ O Systems.	701-708B
Establishment of Product Morphology During the Initial Stages of Wustite Reduction.	709-717B
X ray analysis	
See X ray stress analysis	
X ray diffraction	
See X ray stress analysis	
X ray stress analysis	
Residual Stress Evaluation With X-Rays in Steels Having Preferred Orientation.	1407-1414A
Yield strength	
An Analysis of Biaxial Stretching of a Flat Sheet.	133-138A
Age Hardening in Cu—2.5%Ti.	931-937A
Fatigue Crack Propagation in Dual-Phase Steels: Effects of Ferritic—Martensitic Microstructures on Crack Path Morphology.	1193-1207A
Hot Workability of Three Grades of Tool Steels.	1855-1864A
Yield strength, Alloying effects	
Effects of Hydrogen on Mechanical Properties of Vanadium—Niobium Alloys.	147-153A
Yield strength, Anisotropy	
A Generalized Quadratic Flow Law for Sheet Metals.	129-132A
Yield strength, Cooling effects	
Improved Strength and Ductility in Ni ₃ Al by Boron Modification and Rapid Solidification.	399-402A
Yield strength, Deformation effects	
The Effect of Hot Working on Structure and Strength of a Precipitation Strengthened Austenitic Stainless Steel.	347-368A
Yield strength, Microstructural effects	
The Role of Alpha and Beta Phases in Fatigue Crack Propagation of Ti—Mn Alloys.	155-171A
The Mechanical Behavior of Nonstoichiometric Compounds Ni ₃ Si, Ni ₃ Ge and Fe ₃ Ge.	173-181A
The Effect of Microstructure on the Deformation Modes and Mechanical Properties of Ti—6Al—2Nb—1Ta—0.8Mo. I—Widmanstätten Structures.	1229-1245A
Biaxial Deformation of 70-30 Brass: Flow Behaviors, Texture, Microstructures.	1607-1612A
Yielding Anisotropy From the Bauschinger Effect and Crystallographic Texture in Drawn HSLA Steel Sheet.	1699-1710A
High-Temperature Plastic-Flow Behavior of Mixtures of Austenite, Cementite, Ferrite and Pearlite in Plain-Carbon Steels.	2041-2058A
Yield Loci of HY80, HY100 Steels and Ti—6Al—2Nb—1Ta—0.8Mo.	2097-2101A
Yield strength, Stress effects	
Strain-Rate Sensitivity of Zinc Sheet.	1265-1271A
Yield strength, Temperature effects	
Elevated-Temperature Compressive Steady State Deformation and Failure in the Oxide Dispersion Strengthened Alloy MA 6000E.	1753-1762A
Yield stress	
See Yield strength	
Youngs modulus	
See Modulus of elasticity	
Zinc, Alloying elements	
Surface Relief Produced by Diffusion-Induced Boundary Migration in Cu—Zn.	495-499A
Zinc, Binary systems	
Calculations of Stable and Metastable Equilibrium Diagrams of the Ag—Cu and Cd—Zn Systems.	261-268A
Zinc, Dopants	
Metastable Alloys of Beryllium Prepared by Ion Implantation.	1787-1805A
Zinc, Extraction	
Reaction Kinetics of the Ferric Chloride Leaching of Sphalerite—an Experimental Study.	5-12B
Kinetics of Leaching of Zinc Ferrite in Aqueous Hydrochloric Acid Solutions.	221-228B
Fluidized-Bed Electrodeposition of Zinc.	623-631B
Zinc, Mechanical properties	
Strain-Rate Sensitivity of Zinc Sheet.	1265-1271A